1

FINAL TECHNICAL REPORT
VOLUME III

INTERACTIVE VISUAL SIMULATION OF COMMUNICATION SYSTEMS

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Prepared for

Commander

U.S. Army CECOM

Fort Monmouth, N. J. 07703-5000

LINKNET

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TABLE OF CONTENTS

INTERFACE SOURCE LISTINGS

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; ************************ LN.ASM ****************************

 INCLUDE L3.MAC


 STACK SEGMENT 'STACK' STACK
    DB 1000 DUP (?)
 STACK ENDS

 CONST SEGMENT 'DATA' PARA PUBLIC
  PUBLIC ENVIRON
  ENVIRON DW ?
  LOGO DB 0FFH,59H,0,0,6,77,"┌┐┘└─│"
       DB 0FFH,59H,0,8,6,77,"┌┐┘└─│"
       DB 0FFH,59H,0,16,6,77,"┌┐┘└─│"
       DB 0FFH,35,11,"LINKNET"
       DB 0FFH,31,13,"VISUAL SIMULATOR"
       DB 0FFH,59H,1,1,4,23,"┌┐┘└─│"
       DB 0FFH,59H,27,1,4,23,"┌┐┘└─│"
       DB 0FFH,59H,53,1,4,23,"┌┐┘└─│"
       DB 0FFH,59H,2,2,2,5,"┌┐┘└─│"
       DB 0FFH,59H,10,2,2,5,"┌┐┘└─│"
       DB 0FFH,59H,18,2,2,5,"┌┐┘└─│"
       DB 0FFH,59H,28,2,2,5,"┌┐┘└─│"
       DB 0FFH,59H,36,2,2,5,"┌┐┘└─│"
       DB 0FFH,59H,44,2,2,5,"┌┐┘└─│"
       DB 0FFH,59H,54,2,2,5,"┌┐┘└─│"
       DB 0FFH,59H,62,2,2,5,"┌┐┘└─│"
       DB 0FFH,59H,70,2,2,5,"┌┐┘└─│"
       DB 0FFH,59H,1,17,4,23,"┌┐┘└─│"
       DB 0FFH,59H,27,17,4,23,"┌┐┘└─│"
       DB 0FFH,59H,53,17,4,23,"┌┐┘└─│"
       DB 0FFH,59H,2,18,2,5,"┌┐┘└─│"
       DB 0FFH,59H,10,18,2,5,"┌┐┘└─│"
       DB 0FFH,59H,18,18,2,5,"┌┐┘└─│"
       DB 0FFH,59H,28,18,2,5,"┌┐┘└─│"
       DB 0FFH,59H,36,18,2,5,"┌┐┘└─│"
       DB 0FFH,59H,44,18,2,5,"┌┐┘└─│"
       DB 0FFH,59H,54,18,2,5,"┌┐┘└─│"
       DB 0FFH,59H,62,18,2,5,"┌┐┘└─│"
       DB 0FFH,59H,70,18,2,5,"┌┐┘└─│"
       DB 0FFH,79,25
       DB 0DH
   ROOT_CONTROL DW OFFSET ROOT_STACK_MESS1
     DW OFFSET ROOT_STACK1
     DW OFFSET ROOT_S_MESS1
     DW OFFSET ROOT_S1
     DW OFFSET ROOT_S_MESS1
     DW OFFSET ROOT_S1
     DW 000H
     DW 34FH
     DW 400H
     DW 64FH
     DB 7
     DW OFFSET FUNCTION_CODE_STACK
  DW OFFSET EXTENDED_HELP_STACK
  DW OFFSET FUNCTION_CODE_STACK
  DW OFFSET EXTENDED_HELP_STACK
  DB 0
  DW 0
  DB 0
  DB 0
  DB 0
  DW 0
  DB 20
  DW 0
  DB 0FFH,50H,7,0FFH,60,3
  DB 20 DUP (?)
  DB 0FFH,79,25,0DH

FUNCTION_CODE_STACK DB 40 DUP (?)
EXTENDED_HELP_STACK DB 40 DUP (?)

ROOT_STACK_MESS1 DB 0FFH,50H,0FH,0FFH,0,0
  DB "MAIN_MENU",0DH
  DB 200 DUP (?)

ROOT_STACK1 DB 1
  DB 0FH,70H
  DW OFFSET ROOT_STACK1+5
  DB 1,0,0,8
  DW 0
  DW OFFSET ROOT_S1
  DW OFFSET ROOT_S_MESS1
  DW OFFSET ROOT_S_HELP1
  DB 1,0,0,0
  DW 4 DUP (?)
  DB 1,0,0,0
  DW 4 DUP (?)
  DB 1,0,0,0
  DW 4 DUP (?)
  DB 1,0,0,0
  DW 4 DUP (?)
  DB 1,0,0,0
  DW 4 DUP (?)
  DB 1,0,0,0
  DW 4 DUP (?)
  DB 1,0,0,0
  DW 4 DUP (?)
  DB 1,0,0,0
  DW 4 DUP (?)

ROOT_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "LINK NETWORK DOS EXIT",0DH
ROOT_S_HELP1 DB 0DH,"$"

ROOT_S1 DB 4
  DB 0FH,70H
  DW OFFSET ROOT_S1+5
  DB 1,2,0,3
  DW 0
  DW OFFSET LINK_S1
  DW OFFSET LINK_S_MESS1
  DW OFFSET LINK_S_HELP1
  DB 1,2,5,11
  DW 0
  DW OFFSET NETWORK_S1
  DW OFFSET NETWORK_S_MESS1
  DW OFFSET NETWORK_S_HELP1
  DB 1,2,13,15
  DW 8100H
  DW OFFSET DOS_HANDLER
  DW ?
  DW OFFSET DOS_HELP1
  DB 1,2,17,20
  DW 4000H
  DW OFFSET EXIT_S1
  DW OFFSET EXIT_MESS1
  DW OFFSET EXIT_HELP1

EXIT_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "NO YES"
  DB 0DH
EXIT_HELP1 DB 0DH,"$"
EXIT_S1 DB 2
  DB 0FH,70H
  DW OFFSET EXIT_S1+5
  DB 1,2,0,1
  DW 8200H
  DW OFFSET DUMMY_CALL
  DW ?
  DW OFFSET NO_HELP1
  DB 1,2,3,5
  DW 8200H
  DW OFFSET EXIT_HANDLER
  DW ?
  DW OFFSET YES_HELP1

LINK_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "CONFIGURATION SIMULATE POST-PROCESSING_FILES QUIT"
  DB 0DH
LINK_S_HELP1 DB 0DH,"$"
LINK_S1 DB 4
  DB 0FH,70H
  DW OFFSET LINK_S1+5
  DB 1,2,0,12
  DW 2000H
  DW OFFSET CONFIG_S1
  DW OFFSET CONFIG_S_MESS1
  DW OFFSET CONFIG_S_HELP1
  DB 1,2,14,21
  DW 0
  DW OFFSET SIMUL_S1
  DW OFFSET SIMUL_S_MESS1
  DW OFFSET SIMUL_S_HELP1
  DB 1,2,23,43
  DW 0
  DW OFFSET ANALY_S1
  DW OFFSET ANALY_MESS1
  DW OFFSET LINK_S_HELP1
  DB 1,2,45,48
  DW 8200H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

NETWORK_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "CONFIGURATION SIMULATE POST-PROCESSING_FILES QUIT"
  DB 0DH
NETWORK_S1 DB 4
  DB 0FH,70H
  DW OFFSET NETWORK_S1+5
  DB 1,2,0,12
  DW 2000H
  DW OFFSET NETCON_S1
  DW OFFSET NETCON_S_MESS1
  DW OFFSET NETCON_S_HELP1
  DB 1,2,14,21
  DW 0
  DW OFFSET NET_SIMUL_S1
  DW OFFSET NET_SIMUL_S_MESS1
  DW OFFSET NET_SIMUL_S_HELP1
  DB 1,2,23,43
  DW 1
  DW OFFSET ANALY_S2
  DW OFFSET ANALY_MESS1
  DW OFFSET LINK_S_HELP1
  DB 1,2,45,48
  DW 8200H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1
NETWORK_S_HELP1 DB 0DH,"$"

CONFIG_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "RETRIEVE SAVE EDIT DOS QUIT",0DH
CONFIG_S_HELP1 DW OFFSET CON_HELP
               DW OFFSET DISPLAY_CON
               DW OFFSET RECOVER_CON
CON_HELP DB 0DH,"$"
CONFIG_S1 DB 5
  DB 0FH,70H
  DW OFFSET CONFIG_S1+5
  DB 1,2,0,7
  DW 8100H
  DW OFFSET R_CONFIG_S1
  DW 0
  DW OFFSET R_CONFIG_S_HELP1
  DB 1,2,9,12
  DW 8100H
  DW OFFSET S_CONFIG_S1
  DW 0
  DW OFFSET S_CONFIG_S_HELP1
  DB 1,2,14,17
  DW 0
  DW OFFSET E_CONFIG_S1
  DW OFFSET E_CONFIG_S_MESS1
  DW OFFSET E_CONFIG_S_HELP1
  DB 1,2,19,21
  DW 8100H
  DW OFFSET DOS_HANDLER
  DW ?
  DW OFFSET DOS_HELP1
  DB 1,2,23,26
  DW 8300H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

NETCON_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "RETRIEVE SAVE EDIT DOS QUIT",0DH
NETCON_S_HELP1 DW OFFSET NETCON_HELP
               DW OFFSET DISPLAY_NETCON
               DW OFFSET RECOVER_NETCON
NETCON_HELP DB 0DH,"$"
NETCON_S1 DB 5
  DB 0FH,70H
  DW OFFSET NETCON_S1+5
  DB 1,2,0,7
  DW 8100H
  DW OFFSET R_NETCON_S1
  DW 0
  DW OFFSET R_NETCON_S_HELP1
  DB 1,2,9,12
  DW 8100H
  DW OFFSET S_NETCON_S1
  DW 0
  DW OFFSET S_NETCON_S_HELP1
  DB 1,2,14,17
  DW 0
  DW OFFSET E_NETCON_S1
  DW OFFSET E_NETCON_S_MESS1
  DW OFFSET E_NETCON_S_HELP1
  DB 1,2,19,21
  DW 8100H
  DW OFFSET DOS_HANDLER
  DW ?
  DW OFFSET DOS_HELP1
  DB 1,2,23,26
  DW 8300H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

SIMUL_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
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```
  DB "RUN QUIT",0DH
SIMUL_S_HELP1 DB 0DH,"$"
SIMUL_S1 DB 2
  DB 0FH,70H
  DW OFFSET SIMUL_S1+5
  DB 1,2,0,2
  DW 8100H
  DW OFFSET RUN_S1
  DW 0
  DW OFFSET RUN_HELP1
  DB 1,2,4,7
  DW 8300H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

NET_SIMUL_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "RUN OUTPUT_DISPLAY QUIT",0DH
NET_SIMUL_S_HELP1 DB 0DH,"$"
NET_SIMUL_S1 DB 3
  DB 0FH,70H
  DW OFFSET NET_SIMUL_S1+5
  DB 1,2,0,2
  DW 8101H
  DW OFFSET RUN_S1
  DW 0
  DW OFFSET RUN_HELP1
  DB 1,2,4,17
  DW 0
  DW OFFSET NET_OD_S1
  DW OFFSET NET_OD_MESS1
  DW OFFSET NET_OD_HELP1
  DB 1,2,19,22
  DW 8300H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

E_CONFIG_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "SOURCE  ENCODER MODULATOR   TRANSMITTER_FILTER CHANNEL"
  DB 0FFH,0,3
  DB "RECEIVER_FILTER DEMODULATOR DECODER   QUIT",0DH
E_CONFIG_S_HELP1 DB 0DH,"$"
E_CONFIG_S1 DB 9
  DB 0FH,70H
  DW OFFSET E_CONFIG_S1+5
  DB 1,2,0,5
  DW 2000H
  DW OFFSET SOURCE_S1
  DW OFFSET SOURCE_MESS1
  DW OFFSET SOURCE_HELP1
  DB 1,2,8,14
  DW 2000H
  DW OFFSET ENCODER_S1
  DW OFFSET ENCODER_MESS1
  DW OFFSET ENCODER_HELP1
  DB 1,2,16,24
  DW 2000H
  DW OFFSET MODULATOR_S1
  DW OFFSET MODULATOR_MESS1
  DW OFFSET MODULATOR_HELP1
  DB 1,2,28,45
  DW 2000H
  DW OFFSET CHANNEL_S_S1
  DW OFFSET CHANNEL_S_MESS1
  DW OFFSET CHANNEL_S_HELP1
  DB 1,2,47,53
  DW 2000H
  DW OFFSET CHANNEL_S1
  DW OFFSET CHANNEL_MESS1
  DW OFFSET CHANNEL_HELP1
  DB 1,3,0,14
  DW 2080H
  DW OFFSET CHANNEL_S_S1
  DW OFFSET CHANNEL_S_MESS1
  DW OFFSET RECEIVER_HELP1
  DB 1,3,16,26
  DW 2000H
  DW OFFSET DEMODULATOR_S1
  DW OFFSET DEMODULATOR_MESS1
  DW OFFSET DEMODULATOR_HELP1
  DB 1,3,28,34
  DW 2000H
  DW OFFSET DECODER_S1
  DW OFFSET DECODER_MESS1
  DW OFFSET DECODER_HELP1
  DB 1,3,38,41
  DW 8400H
  DW OFFSET QUIT_HANDLER
  DW 0
  DW OFFSET QUIT_HELP1

E_NETCON_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "STORE_AND_FORWARD MULTIPLE_ACCESS QUIT",0DH
E_NETCON_S1 DB 3
  DB 0FH,70H
  DW OFFSET E_NETCON_S1+5
  DB 1,2,0,16
  DW 2010H
  DW OFFSET SAF_S1
  DW OFFSET SAF_MESS1
  DW OFFSET SAF_HELP1
  DB 1,2,18,32
  DW 2020H
  DW OFFSET MA_S1
  DW OFFSET MA_MESS1
  DW OFFSET MA_HELP1
  DB 1,2,34,37
  DW 8400H
  DW OFFSET QUIT_HANDLER
  DW 0
  DW OFFSET QUIT_HELP1

SOURCE_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "RANDOM_BIT_STREAM SINUSOID QUIT",0DH
SOURCE_HELP1 DW OFFSET SOURCE_HELP
             DW OFFSET SOURCE_POINTER
             DW OFFSET RECOVER_SOURCE
SOURCE_HELP DB 0DH,"$"
SOURCE_S1 DB 3
  DB 0FH,70H
  DW OFFSET SOURCE_S1+5
  DB 1,2,0,16
  DW 8201H
  DW OFFSET SOURCE_SET
  DW 0
  DW OFFSET RBS_HELP1
  DB 1,2,18,25
  DW 2
  DW OFFSET SINU_S1
  DW OFFSET SINU_MESS1
  DW OFFSET SINU_HELP1
  DB 1,2,27,30
  DW 8500H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

ENCODER_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "CONVOLUTIONAL REED_SOLOMON NONE QUIT",0DH
ENCODER_HELP1 DW OFFSET ENCODER_HELP
              DW OFFSET ENCODER_POINTER
              DW OFFSET RECOVER_ENCODER
ENCODER_HELP DB 0DH,"$"
ENCODER_S1 DB 4
  DB 0FH,70H
  DW OFFSET ENCODER_S1+5
  DB 1,2,0,12
  DW 2
  DW OFFSET CC_S1
  DW OFFSET CC_MESS1
  DW OFFSET CC_HELP1
  DB 1,2,14,25
  DW 5
  DW OFFSET RS_S1
  DW OFFSET RS_MESS1
  DW OFFSET RS_HELP1
  DB 1,2,27,30
  DW 8201H
  DW OFFSET ENCODER_SET
  DW 0
  DW OFFSET NONE_EC_HELP1
  DB 1,2,32,35
  DW 8500H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

MODULATOR_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "PSK QAM FSK NONE QUIT",0DH
MODULATOR_HELP1 DW OFFSET MODULATOR_HELP
                DW OFFSET MODULATOR_POINTER
                DW OFFSET RECOVER_MODULATOR
MODULATOR_HELP DB 0DH,"$"
MODULATOR_S1 DB 5
  DB 0FH,70H
  DW OFFSET MODULATOR_S1+5
  DB 1,2,0,2
  DW 1
  DW OFFSET PSK_S1
  DW OFFSET PSK_MESS1
  DW OFFSET PSK_HELP1
  DB 1,2,4,6
  DW 4
  DW OFFSET QAM_S1
  DW OFFSET QAM_MESS1
  DW OFFSET QAM_HELP1
  DB 1,2,8,10
  DW 6
  DW OFFSET FSK_S1
  DW OFFSET FSK_MESS1
  DW OFFSET FSK_HELP1
  DB 1,2,12,15
  DW 8209H
  DW OFFSET MODULATOR_SET
  DW ?
  DW OFFSET QUIT_HELP1
  DB 1,2,17,20
  DW 8500H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

CHANNEL_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "BUTTERWORTH CHEBYCHEV ELLIPTIC FIR NONE QUIT"
  DB 0DH
CHANNEL_S_HELP1 DW OFFSET CHANNEL_S_HELP
                DW OFFSET CHANNEL_S_POINTER
                DW OFFSET RECOVER_CHANNEL_S
CHANNEL_S_HELP DB 0DH,"$"
RECEIVER_HELP1 DW OFFSET RECEIVER_HELP
               DW OFFSET RECEIVER_POINTER
               DW OFFSET RECOVER_RECEIVER
RECEIVER_HELP DB 0DH,"$"
CHANNEL_S_S1 DB 6
  DB 0FH,70H
  DW OFFSET CHANNEL_S_S1+5
  DB 1,2,0,10
  DW 2003H
  DW OFFSET BW_S1
  DW OFFSET BW_MESS1
  DW OFFSET BW_HELP1
  DB 1,2,12,20
  DW 2004H
  DW OFFSET BW_S1
  DW OFFSET BW_MESS1
  DW OFFSET BW_HELP1
  DB 1,2,22,29
  DW 2005H
  DW OFFSET BW_S2
  DW OFFSET BW_MESS2
  DW OFFSET BW_HELP1
  DB 1,2,31,33
  DW 2006H
  DW OFFSET FIR_S1
  DW OFFSET FIR_MESS1
  DW OFFSET FIR_HELP1
  DB 1,2,35,38
  DW 8201H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET NONE_CS_HELP1
  DB 1,2,40,43
  DW 8500H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

CHANNEL_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "WHITE_GAUSSIAN_NOISE PROPAGATION_MODEL BSC NONE QUIT",0DH
CHANNEL_HELP1 DW OFFSET CHANNEL_HELP
              DW OFFSET CHANNEL_POINTER
              DW OFFSET RECOVER_CHANNEL
CHANNEL_HELP DB 0DH,"$"
CHANNEL_S1 DB 5
  DB 0FH,70H
  DW OFFSET CHANNEL_S1+5
  DB 1,2,0,19
  DW 8202H
  DW OFFSET CHANNEL_SET
  DW 0
  DW OFFSET WGNC_HELP1
  DB 1,2,21,37
  DW 2000H
  DW OFFSET PM_S1
  DW OFFSET PM_MESS
  DW OFFSET PM_HELP1
  DB 1,2,39,41
  DW 8203H
  DW OFFSET CHANNEL_SET
  DW 0
  DW OFFSET BSC_HELP1
  DB 1,2,43,46
  DW 8201H
  DW OFFSET CHANNEL_SET
  DW 0
  DW OFFSET NONE_C_HELP1
  DB 1.2,48,51
  DW 8500H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

PM_MESS DB 0FFH,50H,0FH,0FFH,0,2
  DB "TRANSMITTER RECEIVER CARRIER_FREQUENCY DISTANCE AREA_TYPE"
  DB 0FFH,0,3
  DB "FOLIAGE_CHARACTERISTIC QUIT"
  DB 0DH
PM_HELP1 DW OFFSET PM_HELP
         DW OFFSET PM_DISPLAY
         DW OFFSET DUMMY_CALL
PM_HELP DB 0DH,"$"
PM_S1 DB 7
  DB 0FH,70H
  DW OFFSET PM_S1+5
  DB 1,2,0,10
  DW 0
  DW OFFSET TX_S1
  DW OFFSET TX_MESS1
  DW OFFSET BW_HELP
  DB 1,2,12,19
  DW 0
  DW OFFSET RX_S1
  DW OFFSET RX_MESS1
  DW OFFSET BW_HELP
  DB 1,2,21,37
  DW 8100H
  DW OFFSET PM_CF
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,39,46
  DW 8100H
  DW OFFSET PM_DS
  DW 0
  DW OFFSET FIR_HELP
  DB 1,2,48,56
  DW 0
  DW OFFSET AREA_S1
  DW OFFSET AREA_MESS
  DW OFFSET NONE_CS_HELP1
  DB 1,3,0,21
  DW 0
  DW OFFSET FC_S1
  DW OFFSET FC_MESS
  DW OFFSET QUIT_HELP1
  DB 1,3,23,26
  DW 8100H
  DW OFFSET QUIT_HANDLER
  DW 0
  DW OFFSET QUIT_HELP1
```

```
TX_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "ANTENNA_HEIGHT ANTENNA_GAIN POWER QUIT"
  DB 0DH
TX_S1 DB 4
  DB 0FH,70H
  DW OFFSET TX_S1+5
  DB 1,2,0,13
  DW 8100H
  DW OFFSET PM_AT_H_T
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,15,26
  DW 8100H
  DW OFFSET PM_AT_G_T
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,28,32
  DW 8100H
  DW OFFSET PM_POWER
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,34,37
  DW 8100H
  DW OFFSET QUIT_HANDLER
  DW 0
  DW OFFSET FIR_HELP

RX_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "ANTENNA_HEIGHT ANTENNA_GAIN NOISE_POWER BANDWIDTH "
  DB "QUIT"
  DB 0DH
RX_S1 DB 5
  DB 0FH,70H
  DW OFFSET RX_S1+5
  DB 1,2,0,13
  DW 8100H
  DW OFFSET PM_AT_H_R
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,15,26
  DW 8100H
  DW OFFSET PM_AT_G_R
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,28,38
  DW 8100H
  DW OFFSET PM_NOISE
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,40,48
  DW 8100H
  DW OFFSET PM_BANDWIDTH
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,50,53
  DW 8100H
  DW OFFSET QUIT_HANDLER
  DW 0
  DW OFFSET FIR_HELP

AREA_MESS DB 0FFH,50H,0FH,0FFH,0,2
  DB "OPEN SUBURBAN QUIT"
  DB 0DH
AREA_S1 DB 3
  DB 0FH,70H
  DW OFFSET AREA_S1+5
  DB 1,2,0,3
  DW 8200H
  DW OFFSET PM_AREA
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,5,12
  DW 8201H
  DW OFFSET PM_AREA
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,14,17
  DW 8100H
  DW OFFSET QUIT_HANDLER
  DW 0
  DW OFFSET FIR_HELP

FC_MESS DB 0FFH,50H,0FH,0FFH,0,2
  DB "NO_FOLIAGE FOLIAGED QUIT"
  DB 0DH
FC_S1 DB 3
  DB 0FH,70H
  DW OFFSET FC_S1+5
  DB 1,2,0,9
  DW 8200H
  DW OFFSET PM_FOLIAGE
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,11,18
  DW 8202H
  DW OFFSET PM_FOLIAGE
  DW 0
  DW OFFSET BW_HELP
  DB 1,2,20,23
  DW 8100H
  DW OFFSET QUIT_HANDLER
  DW 0
  DW OFFSET FIR_HELP

DEMODULATOR_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "SOFT HARD NONE QUIT",0DH
DEMODULATOR_HELP1 DW OFFSET DEMODULATOR_HELP
                  DW OFFSET DEMODULATOR_POINTER
                  DW OFFSET RECOVER_DEMODULATOR
```

```
DEMODULATOR_HELP DB 0DH,"$"
DEMODULATOR_S1 DB 4
  DB 0FH,70H
  DW OFFSET DEMODULATOR_S1+5
  DB 1,2,0,3
  DW 8201H
  DW OFFSET DEMODULATOR_SET
  DW 0
  DW OFFSET SOFT_HELP1
  DB 1,2,5,8
  DW 8202H
  DW OFFSET DEMODULATOR_SET
  DW 0
  DW OFFSET HARD_HELP1
  DB 1,2,10,13
  DW 8203H
  DW OFFSET DEMODULATOR_SET
  DW ?
  DW OFFSET QUIT_HELP1
  DB 1,2,15,18
  DW 8500H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

DECODER_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "CONVOLUTIONAL REED_SOLOMON NONE QUIT",0DH
DECODER_HELP1 DW OFFSET DECODER_HELP
              DW OFFSET DECODER_POINTER
              DW OFFSET RECOVER_DECODER
DECODER_HELP DB 0DH,"$"
DECODER_S1 DB 4
  DB 0FH,70H
  DW OFFSET DECODER_S1+5
  DB 1,2,0,12
  DW 2
  DW OFFSET CCD_S1
  DW OFFSET CCD_MESS1
  DW OFFSET CCD_HELP1
  DB 1,2,14,25
  DW 8204H
  DW OFFSET DECODER_SET
  DW 0
  DW OFFSET RSD_HELP1
  DB 1,2,27,30
  DW 8201H
  DW OFFSET DECODER_SET
  DW 0
  DW OFFSET NONED_HELP1
  DB 1,2,32,35
  DW 8500H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1
```

```
SAF_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "TOPOLOGY NUMBER_OF_NODES INPUT_TRAFFIC_MATRIX "
  DB "REAL_TIME_ANIMATION QUIT",0DH
SAF_HELP1 DW OFFSET SAF_HELP
          DW OFFSET SET_NET_CON
          DW OFFSET DUMMY_CALL
SAF_HELP DB 0DH,"$"
SAF_S1 DB 5
  DB 0FH,70H
  DW OFFSET SAF_S1+5
  DB 1,2,0,7
  DW 0
  DW OFFSET SAFT_S1
  DW OFFSET SAFT_MESS1
  DW OFFSET SAFT_HELP1
  DB 1,2,9,23
  DW 8100H
  DW OFFSET NON_SET
  DW 0
  DW OFFSET NON_HELP1
  DB 1,2,25,44
  DW 8100H
  DW OFFSET ITM_SET
  DW 0
  DW OFFSET ITM_HELP1
  DB 1,2,46,64
  DW 0
  DW OFFSET REAL_TIME_S1
  DW OFFSET REAL_TIME_MESS1
  DW OFFSET REAL_TIME_HELP1
  DB 1,2,66,69
  DW 8500H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

SAFT_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "STAR LOOP QUIT",0DH
SAFT_HELP1 DB 0DH,"$"
SAFT_S1 DB 3
  DB 0FH,70H
  DW OFFSET SAFT_S1+5
  DB 1,2,0,3
  DW 2001H
  DW OFFSET LC_S1
  DW OFFSET LC_MESS1
  DW OFFSET STAR_HELP1
  DB 1,2,5,8
  DW 0
  DW OFFSET LOOP_S1
  DW OFFSET LOOP_MESS1
  DW OFFSET LOOP_HELP1
  DB 1,2,10,13
  DW 8500H
  DW OFFSET QUIT_HANDLER
```

```
   DW ?
   DW OFFSET QUIT_HELP1

LOOP_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
   DB "UNIDIRECTIONAL_LOOP BIDIRECTIONAL_LOOP QUIT",0DH
LOOP_HELP1 DB 0DH,"$"
LOOP_S1 DB 3
   DB 0FH,70H
   DW OFFSET LOOP_S1+5
   DB 1,2,0,18
   DW 2002H
   DW OFFSET LC_S2
   DW OFFSET LC_MESS1
   DW OFFSET UD_LOOP_HELP1
   DB 1,2,20,37
   DW 2003H
   DW OFFSET LC_S2
   DW OFFSET LC_MESS1
   DW OFFSET BD_LOOP_HELP1
   DB 1,2,39,42
   DW 8500H
   DW OFFSET QUIT_HANDLER
   DW ?
   DW OFFSET QUIT_HELP1

LC_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
   DB "LINK_CAPACITIES QUIT",0DH
LC_S1 DB 2
   DB 0FH,70H
   DW OFFSET LC_S1+5
   DB 1,2,0,14
   DW 8300H
   DW OFFSET LC_SET
   DW 0
   DW OFFSET LC_HELP1
   DB 1,2,16,19
   DW 8500H
   DW OFFSET QUIT_HANDLER
   DW ?
   DW OFFSET QUIT_HELP1
LC_S2 DB 2
   DB 0FH,70H
   DW OFFSET LC_S2+5
   DB 1,2,0,14
   DW 8400H
   DW OFFSET LC_SET
   DW 0
   DW OFFSET LC_HELP1
   DB 1,2,16,19
   DW 8500H
   DW OFFSET QUIT_HANDLER
   DW ?
   DW OFFSET QUIT_HELP1

REAL_TIME_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
```

```
  DB "ON OFF QUIT",0DH
REAL_TIME_HELP1 DB 0DH,"$"
REAL_TIME_S1 DB 3
  DB 0FH,70H
  DW OFFSET REAL_TIME_S1+5
  DB 1,2,0,1
  DW 8201H
  DW OFFSET REAL_TIME_SET
  DW 0
  DW OFFSET SP_HELP1
  DB 1,2,3,5
  DW 8200H
  DW OFFSET REAL_TIME_SET
  DW 0
  DW OFFSET RR_HELP1
  DB 1,2,7,10
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

MA_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "PROTOCOL USER_POPULATION NUMBER_OF_CHANNELS "
  DB "INPUT_TRAFFIC_RATE"
  DB 0FFH,0,3,"REAL_TIME_ANIMATION QUIT",0DH
MA_HELP1 DW OFFSET MA_HELP
         DW OFFSET SET_NET_CON
         DW OFFSET DUMMY_CALL
MA_HELP DB 0DH,"$"
MA_S1 DB 6
  DB 0FH,70H
  DW OFFSET MA_S1+5
  DB 1,2,0,7
  DW 0
  DW OFFSET PRO_S1
  DW OFFSET PRO_S_MESS1
  DW OFFSET PRO_S_HELP1
  DB 1,2,9,23
  DW 8100H
  DW OFFSET UP_SET
  DW 0
  DW OFFSET UP_HELP1
  DB 1,2,25,42
  DW 8100H
  DW OFFSET NOC_SET
  DW ?
  DW OFFSET NOC_HELP1
  DB 1,2,44,61
  DW 8100H
  DW OFFSET ITM_SET1
  DW ?
  DW OFFSET ITR_HELP1
  DB 1,3,0,18
  DW 0
  DW OFFSET REAL_TIME_S1
```

```
   DW OFFSET REAL_TIME_MESS1
   DW OFFSET REAL_TIME_HELP1
   DB 1,3,20,23
   DW 8500H
   DW OFFSET QUIT_HANDLER
   DW ?
   DW OFFSET QUIT_HELP1

PRO_S_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
   DB "ALOHA TREE CSMA QUIT",0DH
PRO_S_HELP1 DB 0DH,"$"
PRO_S1 DB 3
   DB 0FH,70H
   DW OFFSET PRO_S1+5
   DB 1,2,0,4
   DW 2001H
   DW OFFSET ALOHA_S1
   DW OFFSET ALOHA_MESS1
   DW OFFSET ALOHA_HELP1
   DB 1,2,6,9
   DW 8202H
   DW OFFSET MA_PRO_SET
   DW 0
   DW OFFSET TCR_HELP1
   DB 1,2,11,14
   DW 2003H
   DW OFFSET CSMA_S1
   DW OFFSET CSMA_MESS1
   DW OFFSET CSMA_HELP1
   DB 1,2,16,19
   DW 8600H
   DW OFFSET QUIT_HANDLER
   DW ?
   DW OFFSET QUIT_HELP1

ALOHA_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
   DB "MAXIMUM_BACKOFF_DELAY QUIT",0DH
ALOHA_HELP1 DW OFFSET MA_HELP
            DW OFFSET MA_PRO_SET
            DW OFFSET DUMMY_CALL
ALOHA_S1 DB 2
   DB 0FH,70H
   DW OFFSET ALOHA_S1+5
   DB 1,2,0,20
   DW 8300H
   DW OFFSET AMBD_S1
   DW 0
   DW OFFSET MA_HELP
   DB 1,2,22,25
   DW 8600H
   DW OFFSET QUIT_HANDLER
   DW ?
   DW OFFSET QUIT_HELP1

CSMA_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
```

```
  DB "MAXIMUM_BACKOFF_DELAY PROPAGATION_RATIO QUIT",0DH
CSMA_HELP1 DW OFFSET MA_HELP
            DW OFFSET MA_PRO_SET
            DW OFFSET DUMMY_CALL
CSMA_S1 DB 3
  DB 0FH,70H
  DW OFFSET CSMA_S1+5
  DB 1,2,0,20
  DW 8100H
  DW OFFSET AMBD_S1
  DW 0
  DW OFFSET MA_HELP
  DB 1,2,22,38
  DW 8101H
  DW OFFSET AMBD_S1
  DW 0
  DW OFFSET MA_HELP
  DB 1,2,40,43
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

SINU_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "SINUSOID_FREQUENCY SAMPLING_FREQUENCY QUIT",0DH
SINU_HELP1 DB 0DH,"$"
SINU_S1 DB 3
  DB 0FH,70H
  DW OFFSET SINU_S1+5
  DB 1,2,0,17
  DW 8100H
  DW OFFSET SOURCE_SET
  DW 0
  DW OFFSET SINU_F_HELP1
  DB 1,2,19,36
  DW 8110H
  DW OFFSET SOURCE_SET
  DW 0
  DW OFFSET SINU_A_HELP1
  DB 1,2,38,41
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

CC_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "(r=1/2,K=3)_BINARY (r=1/2,K=7)_BINARY QUIT",0DH
CC_HELP1 DB 0DH,"$"
CC_S1 DB 3
  DB 0FH,70H
  DW OFFSET CC_S1+5
  DB 1,2,0,17
  DW 8300H
  DW OFFSET ENCODER_SET
  DW 0
  DW OFFSET CCR2K3_HELP1
  DB 1,2,19,36
  DW 8301H
  DW OFFSET ENCODER_SET
  DW 0
  DW OFFSET CCR2K7_HELP1
  DB 1,2,38,41
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

RS_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "(15,9) QUIT",0DH
RS_HELP1 DB 0DH,"$"
RS_S1 DB 2
  DB 0FH,70H
  DW OFFSET RS_S1+5
  DB 1,2,0,5
  DW 8300H
  DW OFFSET ENCODER_SET
  DW 0
  DW OFFSET RS15_9_HELP1
  DB 1,2,7,10
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

CCD_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "SOFT_DECISION_VITERBI HARD_DECISION_VITERBI QUIT",0DH
CCD_HELP1 DB 0DH,"$"
CCD_S1 DB 3
  DB 0FH,70H
  DW OFFSET CCD_S1+5
  DB 1,2,0,20
  DW 8300H
  DW OFFSET DECODER_SET
  DW 0
  DW OFFSET CCD_SV_HELP1
  DB 1,2,22,42
  DW 8301H
  DW OFFSET DECODER_SET
  DW 0
  DW OFFSET CCD_HV_HELP1
  DB 1,2,44,47
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

BW_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "BY_ORDER BY_ATTENUATION QUIT",0DH
BW_HELP1 DW OFFSET BW_HELP
         DW OFFSET BW_SET
         DW OFFSET DUMMY_CALL
BW_HELP DB 0DH,"$"
BW_S1 DB 3
  DB 0FH,70H
  DW OFFSET BW_S1+5
  DB 1,2,0,7
  DW 2000H
  DW OFFSET ORDER_S1
  DW OFFSET ORDER_MESS1
  DW OFFSET ORDER_HELP1
  DB 1,2,9,22
  DW 2040H
  DW OFFSET ATTN_S1
  DW OFFSET ATTN_MESS1
  DW OFFSET ATTN_HELP1
  DB 1,2,24,27
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

BW_MESS2 DB 0FFH,50H,0FH,0FFH,0,2
  DB "BY_ATTENUATION QUIT",0DH
BW_S2 DB 2
  DB 0FH,70H
  DW OFFSET BW_S2+5
  DB 1,2,0,13
  DW 2040H
  DW OFFSET ATTN_S1
  DW OFFSET ATTN_MESS1
  DW OFFSET ATTN_HELP1
  DB 1,2,15,18
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

FIR_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "BY_ATTENUATION BY_COEFFICIENTS SAVE_FIR RETRIEVE_FIR "
  DB "DOS QUIT",0DH
FIR_HELP1 DW OFFSET FIR_HELP
          DW OFFSET BW_SET
          DW OFFSET DUMMY_CALL
FIR_HELP DB 0DH,"$"
FIR_S1 DB 6
  DB 0FH,70H
  DW OFFSET FIR_S1+5
  DB 1,2,0,13
  DW 2040H
  DW OFFSET ATTN_S1
  DW OFFSET ATTN_MESS1
  DW OFFSET ATTN_HELP1
  DB 1,2,15,29
  DW 2000H
  DW OFFSET COEF_S1
  DW OFFSET COEF_MESS1
  DW OFFSET COEF_HELP1
  DB 1,2,31,38
  DW 8100H
  DW OFFSET FIR_SAVE1
  DW ?
  DW OFFSET FIR_S_HELP1
  DB 1,2,40,51
  DW 8100H
  DW OFFSET FIR_RETRIEVE1
  DW ?
  DW OFFSET FIR_R_HELP1
  DB 1,2,53,55
  DW 8100H
  DW OFFSET DOS_HANDLER
  DW ?
  DW OFFSET DOS_HELP1
  DB 1,2,57,60
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

IIR_HELP1 DB 0DH,"$"

PSK_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "BPSK TIME_DOMAIN_BPSK QPSK 8-PSK QUIT",0DH
PSK_HELP1 DB 0DH,"$"
PSK_S1 DB 5
  DB 0FH,70H
  DW OFFSET PSK_S1+5
  DB 1,2,0,3
  DW 8300H
  DW OFFSET MODULATOR_SET
  DW 0
  DW OFFSET BPSK_HELP1
  DB 1,2,5,20
  DW 8309H
  DW OFFSET MODULATOR_SET
  DW 0
  DW OFFSET BPSK_HELP1
  DB 1,2,22,25
  DW 8301H
  DW OFFSET MODULATOR_SET
  DW 0
  DW OFFSET QPSK_HELP1
  DB 1,2,27,31
  DW 8302H
  DW OFFSET MODULATOR_SET
  DW 0
  DW OFFSET PSK8_HELP1
  DB 1,2,33,36
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

QAM_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "16-QAM 64-QAM QUIT",0DH
QAM_HELP1 DB 0DH,"$"
QAM_S1 DB 3
  DB 0FH,70H
  DW OFFSET QAM_S1+5
  DB 1,2,0,5
  DW 8300H
  DW OFFSET MODULATOR_SET
  DW 0
  DW OFFSET QAM16_HELP1
  DB 1,2,7,12
  DW 8301H
  DW OFFSET MODULATOR_SET
  DW 0
  DW OFFSET QAM64_HELP1
  DB 1,2,14,17
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

FSK_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "BFSK 4-FSK QUIT",0DH
FSK_HELP1 DB 0DH,"$"
FSK_S1 DB 4
  DB 0FH,70H
  DW OFFSET FSK_S1+5
  DB 1,2,0,3
  DW 8300H
  DW OFFSET MODULATOR_SET
  DW 0
  DW OFFSET BFSK_HELP1
  DB 1,2,5,9
  DW 8301H
  DW OFFSET MODULATOR_SET
  DW 0
  DW OFFSET QFSK_HELP1
  DB 1,2,11,14
  DW 8600H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

ATTN_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "SAMPLING_FREQUENCY PASSBAND_EDGE_FREQUENCY "
  DB "STOPBAND_EDGE_FREQUENCY"
  DB 0FFH,0,3
  DB "PASSBAND_ATTENUATION STOPBAND_ATTENUATION QUIT",0DH
ATTN_HELP1 DW OFFSET ATTN_HELP
           DW OFFSET ORDER_SET
           DW OFFSET DUMMY_CALL
ATTN_HELP DB 0DH,"$"
```

```
ATTN_S1 DB 6
  DB 0FH,70H
  DW OFFSET ATTN_S1+5
  DB 1,2,0,17
  DW 8100H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET SF_HELP1
  DB 1,2,19,41
  DW 8110H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET CF_HELP1
  DB 1,2,43,65
  DW 8118H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET PA_HELP1
  DB 1,3,0,19
  DW 8120H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET SA_HELP1
  DB 1,3,21,40
  DW 8130H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET SA_HELP1
  DB 1,3,42,45
  DW 8000H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

ORDER_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "ORDER SAMPLING_FREQUENCY CUTOFF_FREQUENCY QUIT",0DH
ORDER_HELP1 DW OFFSET ORDER_HELP
            DW OFFSET ORDER_SET
            DW OFFSET DUMMY_CALL
ORDER_HELP DB 0DH,"$"
ORDER_S1 DB 5
  DB 0FH,70H
  DW OFFSET ORDER_S1+5
  DB 1,2,0,4
  DW 8100H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET ORDER2_HELP1
  DB 1,2,6,23
  DW 8110H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET SFO_HELP1
  DB 1,2,25,40
  DW 8120H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET CFO_HELP1
  DB 1,2,42,45
  DW 8000H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

COEF_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "ORDER SAMPLING_FREQUENCY CUTOFF_FREQUENCY "
  DB "COEFFICIENTS QUIT",0DH
COEF_HELP1 DW OFFSET COEF_HELP
           DW OFFSET ORDER_SET
           DW OFFSET DUMMY_CALL
COEF_HELP DB 0DH,"$"
COEF_S1 DB 5
  DB 0FH,70H
  DW OFFSET COEF_S1+5
  DB 1,2,0,4
  DW 8100H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET ORDER2_HELP1
  DB 1,2,6,23
  DW 8110H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET SFO_HELP1
  DB 1,2,25,40
  DW 8120H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET CFO_HELP1
  DB 1,2,42,53
  DW 8130H
  DW OFFSET FILTER_SET
  DW 0
  DW OFFSET CFO_HELP1
  DB 1,2,55,58
  DW 8000H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

OD_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "BIT_ERROR_RATE SIGNAL_CONSTELLATIONS "
  DB "FILTER_WAVEFORMS QUIT",0DH
OD_HELP1 DB 0DH,"$"
OD_S1 DB 4
  DB 0FH,70H
  DW OFFSET OD_S1+5
  DB 0,2,0,13
  DW 8100H
  DW OFFSET BERH_S1
  DW ?
  DW OFFSET BERH_HELP1
  DB 0,2,15,35
  DW 8100H
  DW OFFSET SC_S1
  DW ?
  DW OFFSET SC_HELP1
  DB 0,2,37,52
  DW 8100H
  DW OFFSET FD_S1
  DW ?
  DW OFFSET SC_HELP1
  DB 1,2,54,57
  DW 8000H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

NET_OD_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "STORE_AND_FORWARD MULTIPLE_ACCESS QUIT",0DH
NET_OD_HELP1 DB 0DH,"$"
NET_OD_S1 DB 3
  DB 0FH,70H
  DW OFFSET NET_OD_S1+5
  DB 1,2,0,16
  DW 8200H
  DW OFFSET SAF_OD_S1
  DW 0
  DW OFFSET SAF_OD_HELP1
  DB 1,2,18,32
  DW 8200H
  DW OFFSET MA_OD_S1
  DW 0
  DW OFFSET MA_OD_HELP1
  DB 1,2,34,37
  DW 8300H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

SAF_OD_MESS1 DB 0FFH,50H,0FH,0FFH,57H,0,7,4FH,24
  DB 0FFH,30,5,0FFH,50H,70H,"FINISH",0FFH,50H,0FH
  DB ":       F1"
  DB 0FFH,30,6,"PACKET DELAY: F2"
  DB 0FFH,30,7,"THROUGHPUT:   F3"
  DB 0FFH,59H,19,9,6,35,"┌┐┘└─│"
  DB 0FFH,20,10,"Display Packet Delay:         "
  DB 0FFH,50H,70H,"ON ",0FFH,50H,0FH
  DB 0FFH,20,12,"Enter Source Node Number:        "
  DB 0FFH,20,14,"Enter Destination Node Number:  "
  DB 0FFH,59H,19,17,6,35,"┌┐┘└─│"
  DB 0FFH,20,18,"Display Throughput:           "
  DB 0FFH,50H,70H,"ON ",0FFH,50H,0FH
  DB 0FFH,20,20,"Enter Source Node Number:        "
  DB 0FFH,20,22,"Enter Destination Node Number:  "
  DB 0FFH,29,75,0DH
SAF_OD_MESS3 DB 0FFH,50,10
             DB 0FFH,50H,70H,"OFF",0FFH,50H,0FH,0FFH,79,25,0DH
SAF_OD_MESS5 DB 0FFH,50,18
             DB 0FFH,50H,70H,"OFF",0FFH,50H,0FH,0FFH,79,25,0DH
SAF_OD_PD_OFF DB 0FFH,50H,7,0FFH,20,12
    DB "                                "
    DB 0FFH,20,14
    DB "                                ",0FFH,79,25,0DH
SAF_OD_PB_OFF DB 0FFH,50H,7,0FFH,20,20
    DB "                                "
    DB 0FFH,20,22
    DB "                                ",0FFH,79,25,0DH
SAF_OD_CTL DB 3
           DB 30,5
           DB 35,5
           DB 0
           DB 50,10
           DB 52,10
           DB 1
           DB 50,18
           DB 52,18
           DB 2

MA_OD_MESS1 DB 0FFH,50H,0FH,0FFH,57H,0,7,4FH,24
  DB 0FFH,24,7,0FFH,50H,70H,"FINISH",0FFH,50H,0FH
  DB ":       F1"
  DB 0FFH,24,8,"PACKET DELAY: F2"
  DB 0FFH,24,9,"THROUGHPUT:   F3"
  DB 0FFH,59H,19,11,5,28,"┌┐┘└─│"
  DB 0FFH,20,13,"Display Packet Delay:   "
  DB 0FFH,50H,70H,"ON ",0FFH,50H,0FH
  DB 0FFH,20,15,"Display Throughput:     "
  DB 0FFH,50H,70H,"ON ",0FFH,50H,0FH
  DB 0FFH,79,25,0DH
MA_OD_MESS3 DB 0FFH,44,13
            DB 0FFH,50H,70H,"OFF",0FFH,50H,0FH,0FFH,79,25,0DH
MA_OD_MESS5 DB 0FFH,44,15
            DB 0FFH,50H,70H,"OFF",0FFH,50H,0FH,0FFH,79,25,0DH
MA_OD_CTL DB 3
            DB 24,7
            DB 29,7
            DB 0
            DB 44,13
            DB 46,13
            DB 1
            DB 44,15
            DB 46,15
            DB 2
MA_OD_CTL_K DB 3
            DW F1_KEY
            DB 0
            DW F2_KEY
            DB 1
            DW F3_KEY
```

```
             DB 2

ANALY_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "VIEW_DATA VIEW_GRAPH QUIT",0DH
ANALY_HELP1 DB 0DH,"$"
ANALY_S1 DB 3
  DB 0FH,70H
  DW OFFSET ANALY_S1+5
  DB 1,2,0,8
  DW 0
  DW OFFSET VD_S1
  DW OFFSET VD_MESS1
  DW OFFSET RETRIEVE_HELP1
  DB 1,2,10,19
  DW 0
  DW OFFSET OD_S1
  DW OFFSET OD_MESS1
  DW OFFSET LINK_S_HELP1
  DB 1,2,21,24
  DW 8400H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

ANALY_S2 DB 3
  DB 0FH,70H
  DW OFFSET ANALY_S2+5
  DB 1,2,0,8
  DW 8103H
  DW OFFSET CI_S1
  DW 0
  DW OFFSET RETRIEVE_HELP1
  DB 1,2,10,19
  DW 0
  DW OFFSET NVD_S1
  DW OFFSET NVD_MESS1
  DW OFFSET LINK_S_HELP1
  DB 1,2,21,24
  DW 8400H
  DW OFFSET QUIT_HANDLER
  DW ?
  DW OFFSET QUIT_HELP1

NVD_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
  DB "PACKET_DELAY THROUGHPUT QUIT",0DH
NVD_S1 DB 3
  DB 0FH,70H
  DW OFFSET NVD_S1+5
  DB 1,2,0,11
  DW 8101H
  DW OFFSET CI_S1
  DW 0
  DW OFFSET RETRIEVE_HELP1
  DB 1,2,13,22
```

```
   DW 8102H
   DW OFFSET CI_S1
   DW 0
   DW OFFSET LINK_S_HELP1
   DB 1,2,24,27
   DW 8400H
   DW OFFSET QUIT_HANDLER
   DW ?
   DW OFFSET QUIT_HELP1

VD_MESS1 DB 0FFH,50H,0FH,0FFH,0,2
   DB "PERFORMANCE_DATA TRANSMITTER_FILTER_DESIGN_DATA "
   DB "RECEIVER_FILTER_DESIGN_DATA"
   DB 0FFH,0,3
   DB "QUIT",0DH
VD_S1 DB 4
   DB 0FH,70H
   DW OFFSET VD_S1+5
   DB 0,2,0,15
   DW 8100H
   DW OFFSET RE_S1
   DW 0
   DW OFFSET RETRIEVE_HELP1
   DB 0,2,17,46
   DW 8101H
   DW OFFSET RE_S1
   DW 0
   DW OFFSET LINK_S_HELP1
   DB 0,2,48,74
   DW 8102H
   DW OFFSET RE_S1
   DW 0
   DW OFFSET LINK_S_HELP1
   DB 1,3,0,3
   DW 8400H
   DW OFFSET QUIT_HANDLER
   DW ?
   DW OFFSET QUIT_HELP1

BERH_HELP1 DB 0DH,"$"
FIR_S_HELP1 DB 0DH,"$"
FIR_R_HELP1 DB 0DH,"$"
DOS_HELP1 DB 0DH,"$"
YES_HELP1 DB 0DH,"$"
NO_HELP1 DB 0DH,"$"
SC_HELP1 DB 0DH,"$"
RUN_HELP1 DB 0DH,"$"
BPSK_HELP1 DB 0DH,"$"
QPSK_HELP1 DB 0DH,"$"
PSK8_HELP1 DB 0DH,"$"
BFSK_HELP1 DB 0DH,"$"
QFSK_HELP1 DB 0DH,"$"
FSK8_HELP1 DB 0DH,"$"
QAM16_HELP1 DB 0DH,"$"
QAM64_HELP1 DB 0DH,"$"
```

```
SOFT_HELP1 DB 0DH,"$"
HARD_HELP1 DB 0DH,"$"
SF_HELP1 DB 0DH,"$"
CF_HELP1 DB 0DH,"$"
PA_HELP1 DB 0DH,"$"
SA_HELP1 DB 0DH,"$"
CODED_HELP1 DB 0DH,"$"
UNCODED_HELP1 DB 0DH,"$"
NONE_BE_HELP1 DB 0DH,"$"
CCR2K3_HELP1 DB 0DH,"$"
CCR2K7_HELP1 DB 0DH,"$"
DUAL3_HELP1 DB 0DH,"$"
RS15_9_HELP1 DB 0DH,"$"
RS255_223_HELP1 DB 0DH,"$"
NONE_EC_HELP1 DB 0DH,"$"
CCD_SV_HELP1 DB 0DH,"$"
CCD_HV_HELP1 DB 0DH,"$"
RSD_HELP1 DB 0DH,"$"
R_CONFIG_S_HELP1 DB 0DH,"$"
S_CONFIG_S_HELP1 DB 0DH,"$"
WGN_HELP1 DB 0DH,"$"
RBS_HELP1 DB 0DH,"$"
SINU_F_HELP1 DB 0DH,"$"
SINU_A_HELP1 DB 0DH,"$"
ORDER2_HELP1 DB 0DH,"$"
SFO_HELP1 DB 0DH,"$"
CFO_HELP1 DB 0DH,"$"
NONE_CS_HELP1 DB 0DH,"$"
NONE_C_HELP1 DB 0DH,"$"
NONED_HELP1 DB 0DH,"$"
LP_HELP1 DB 0DH,"$"
WGNC_HELP1 DB 0DH,"$"
BSC_HELP1 DB 0DH,"$"
DPSK_HELP1 DB 0DH,"$"
QUIT_HELP1 DB 0DH,"$"
CODEDS_HELP1 DB 0DH,"$"
UNCODEDS_HELP1 DB 0DH,"$"
RETRIEVE_HELP1 DB 0DH,"$"
CI_HELP1 DB 0DH,"$"
IS_HELP1 DB 0DH,"$"
R_NETCON_S_HELP1 DB 0DH,"$"
S_NETCON_S_HELP1 DB 0DH,"$"
E_NETCON_S_HELP1 DB 0DH,"$"
UP_HELP1 DB 0DH,"$"
NOC_HELP1 DB 0DH,"$"
NON_HELP1 DB 0DH,"$"
ITR_HELP1 DB 0DH,"$"
TCR_HELP1 DB 0DH,"$"
LC_HELP1 DB 0DH,"$"
ITM_HELP1 DB 0DH,"$"
SP_HELP1 DB 0DH,"$"
RR_HELP1 DB 0DH,"$"
SAF_PB_HELP1 DB 0DH,"$"
SAF_PD_HELP1 DB 0DH,"$"
NONE_OD_HELP1 DB 0DH,"$"
```

```
MA_NONE_HELP1 DB 0DH,"$"
MA_PD_HELP1 DB 0DH,"$"
STAR_HELP1 DW OFFSET STAR_HELP
           DW OFFSET TOPOLOGY_SET
           DW OFFSET DUMMY_CALL
STAR_HELP DB 0DH,"$"
SAF_OD_HELP1 DB 0DH,"$"
MA_OD_HELP1 DB 0DH,"$"
UD_LOOP_HELP1 DW OFFSET UD_LOOP_HELP
              DW OFFSET TOPOLOGY_SET
              DW OFFSET DUMMY_CALL
UD_LOOP_HELP DB 0DH,"$"
BD_LOOP_HELP1 DW OFFSET BD_LOOP_HELP
              DW OFFSET TOPOLOGY_SET
              DW OFFSET DUMMY_CALL
BD_LOOP_HELP DB 0DH,"$"


CON_SCREEN DB 0FFH,5BH,50H,0FFH,50H,0FH
           DB 0FFH,59H,0,9,5,13,"┌┐┘└─│"
           DB 0FFH,59H,17,9,5,13,"┌┐┘└─│"
           DB 0FFH,59H,34,9,5,13,"┌┐┘└─│"
           DB 0FFH,59H,51,9,5,13,"┌┐┘└─│"
           DB 0FFH,59H,67,14,4,11,"┌┐┘└─│"
           DB 0FFH,59H,0,18,5,13,"┌┐┘└─│"
           DB 0FFH,59H,17,18,5,13,"┌┐┘└─│"
           DB 0FFH,59H,34,18,5,13,"┌┐┘└─│"
           DB 0FFH,59H,51,18,5,13,"┌┐┘└─│"
    S1     DB 0FFH,50H,7,0FFH,4,10,"SOURCE",0DH
    S2     DB 0FFH,50H,7,0FFH,21,10,"ENCODER",0DH
    S3     DB 0FFH,50H,7,0FFH,37,10,"MODULATOR",0DH
    S4     DB 0FFH,50H,7,0FFH,53,10,"TRANSMITTER"
           DB 0FFH,55,11,"FILTER"
           DB 0DH
    S5     DB 0FFH,50H,7,0FFH,70,15,"CHANNEL",0DH
           DB 0FFH,50H,7,0FFH,5,19,"SINK"
    S6     DB 0FFH,50H,7,0FFH,21,19,"DECODER",0DH
    S7     DB 0FFH,50H,7,0FFH,36,19,"DEMODULATOR",0DH
    S8     DB 0FFH,50H,7,0FFH,54,19,"RECEIVER",0FFH,55,20,"FILTER"
           DB 0DH
           DB 0FFH,50H,0FH
           DB 0FFH,14,12,"├──┤"
           DB 0FFH,31,12,"├──┤"
           DB 0FFH,48,12,"├──┤"
           DB 0FFH,65,12,"├───────┐"
           DB 0FFH,73,13,"│"
           DB 0FFH,73,14,"┴"
           DB 0FFH,14,21,"├──┤"
           DB 0FFH,31,21,"├──┤"
           DB 0FFH,48,21,"├──┤"
           DB 0FFH,73,19,"┬"
           DB 0FFH,73,20,"│"
           DB 0FFH,65,21,"├───────┘"
           DB 0DH,"$"
CON_SCREEN_CLEAR DB 0FFH,57H,0,9,79,24,0DH
```

```
  T1       DB 0FFH,50H,87H,0FFH,4,10,"SOURCE",0DH
  T2       DB 0FFH,50H,87H,0FFH,21,10,"ENCODER",0DH
  T3       DB 0FFH,50H,87H,0FFH,37,10,"MODULATOR",0DH
  T4       DB 0FFH,50H,87H,0FFH,53,10,"TRANSMITTER",0FFH,55,11
           DB "FILTER",0DH
  T5       DB 0FFH,50H,87H,0FFH,70,15,"CHANNEL",0DH
  T6       DB 0FFH,50H,87H,0FFH,21,19,"DECODER",0DH
  T7       DB 0FFH,50H,87H,0FFH,36,19,"DEMODULATOR",0DH
  T8       DB 0FFH,50H,87H,0FFH,54,19,"RECEIVER",0FFH,55,20
           DB "FILTER",0DH
MOD_P DW OFFSET MOD_BPSK
      DW OFFSET MOD_QPSK
      DW OFFSET MOD_8PSK
      DW OFFSET MOD_16QAM
      DW OFFSET MOD_64QAM
      DW OFFSET MOD_BFSK
      DW OFFSET MOD_4FSK
      DW OFFSET MOD_8FSK
      DW OFFSET MOD_NONE
      DW OFFSET MOD_TBPSK
MOD_UDF DB 0FFH,57H,35,11,47,14,0FFH,50H,7,0DH
MOD_BPSK DB 0FFH,39,12,"BPSK",0DH
MOD_QPSK DB 0FFH,39,12,"QPSK",0DH
MOD_8PSK DB 0FFH,39,12,"8-PSK",0DH
MOD_16QAM DB 0FFH,38,12,"16-QAM",0DH
MOD_64QAM DB 0FFH,38,12,"64-QAM",0DH
MOD_BFSK DB 0FFH,39,12,"BFSK",0DH
MOD_4FSK DB 0FFH,39,12,"4-FSK",0DH
MOD_8FSK DB 0FFH,39,12,"8-FSK",0DH
MOD_NONE DB 0FFH,39,12,"None",0DH
MOD_TBPSK DB 0FFH,36,12,"Time Domain",0FFH,39,13,"BPSK",0DH
ECD_P DW OFFSET ECD_NONE
      DW OFFSET ECD_CCK3
      DW OFFSET ECD_CCK7
      DW OFFSET ECD_DUAL3
      DW OFFSET ECD_RS15
      DW OFFSET ECD_RS255
ECD_UDF DB 0FFH,57H,18,11,30,14,0FFH,50H,7,0DH
ECD_NONE DB 0FFH,22,12,"None",0DH
ECD_CCK3 DB 0FFH,19,12,"(r=1/2,K=3)",0FFH,18,13,"Convolutional"
         DB 0DH
ECD_CCK7 DB 0FFH,19,12,"(r=1/2,K=7)",0FFH,18,13,"Convolutional"
         DB 0DH
ECD_DUAL3 DB 0FFH,20,12,"Dual-3",0FFH,18,13,"Convolutional"
         DB 0DH
ECD_RS15 DB 0FFH,20,12,"(15,9)",0FFH,18,13,"Reed-Solomon"
         DB 0DH
ECD_RS255 DB 0FFH,19,12,"(255,223)",0FFH,18,13,"Reed-Solomon"
          DB 0DH
SOU_P DW OFFSET SOU_RBS
      DW OFFSET SOU_SINU
      DW OFFSET SOU_SW
      DW OFFSET SOU_WGN
SOU_UDF DB 0FFH,57H,1,11,13,14,0FFH,50H,7,0DH
SOU_RBS DB 0FFH,2,12,"Random Bit",0FFH,4,13,"Stream",0DH
```

```
SOU_SINU DB 0FFH,3,12,"Sinusoid",0DH
SOU_SW DB 0FFH,2,12,"Square Wave",0DH
SOU_WGN DB 0FFH,4,12,"White",0FFH,3,13,"Gaussian",0FFH,4,14
         DB "Noise",0DH
DCD_P DW OFFSET DCD_NONE
      DW OFFSET DCD_SOFT
      DW OFFSET DCD_HARD
      DW OFFSET DCD_REED
DCD_UDF DB 0FFH,57H,18,20,30,23,0FFH,50H,7,0DH
DCD_NONE DB 0FFH,22,21,"None",0DH
DCD_SOFT DB 0FFH,18,21,"Soft Viterbi",0DH
DCD_HARD DB 0FFH,18,21,"Hard Viterbi",0DH
DCD_REED DB 0FFH,18,21,"Reed-Solomon",0DH
DEMOD_P DW OFFSET DEMOD_SOFT
        DW OFFSET DEMOD_HARD
        DW OFFSET DEMOD_NONE
DEMOD_UDF DB 0FFH,57H,35,20,47,23,0FFH,50H,7,0DH
DEMOD_SOFT DB 0FFH,39,21,"Soft",0DH
DEMOD_HARD DB 0FFH,39,21,"Hard",0DH
DEMOD_NONE DB 0FFH,39,21,"None",0DH
CF_P DW OFFSET CF_NONE
     DW OFFSET CF_LP
     DW OFFSET CF_BW
     DW OFFSET CF_CB
     DW OFFSET CF_EP
     DW OFFSET CF_FIR
     DW OFFSET CF_IIR
CF_UDF DB 0FFH,57H,52,12,64,14,0FFH,50H,7,0DH
CF_NONE DB 0FFH,56,13,"None",0DH
CF_LP DB 0FFH,54,13,"Low-Pass",0DH
CF_BW DB 0FFH,53,13,"Butterworth",0DH
CF_CB DB 0FFH,54,13,"Chebychev",0DH
CF_EP DB 0FFH,54,13,"Elliptic",0DH
CF_FIR DB 0FFH,57,13,"FIR",0DH
CF_IIR DB 0FFH,57,13,"IIR",0DH
CFT_P1 DW OFFSET CFT_ORDER
       DW OFFSET CFT_ATTEN
CFT_P2 DW OFFSET CFT_ORDER1
       DW OFFSET CFT_ATTEN
CFT_UDF DB 0FFH,57H,52,14,64,14,0FFH,50H,7,0DH
CFT_ORDER DB 0FFH,56,14,"Order",0DH
CFT_ATTEN DB 0FFH,53,14,"Attenuation",0DH
CFT_ORDER1 DB 0FFH,52,14,"Coefficients",0DH
RF_P DW OFFSET RF_NONE
     DW OFFSET RF_LP
     DW OFFSET RF_BW
     DW OFFSET RF_CB
     DW OFFSET RF_EP
     DW OFFSET RF_FIR
     DW OFFSET RF_IIR
RF_UDF DB 0FFH,57H,52,21,64,23,0FFH,50H,7,0DH
RF_NONE DB 0FFH,56,22,"None",0DH
RF_LP DB 0FFH,54,22,"Low-Pass",0DH
RF_BW DB 0FFH,53,22,"Butterworth",0DH
RF_CB DB 0FFH,54,22,"Chebychev",0DH
```

```
RF_EP DB 0FFH,54,22,"Elliptic",0DH
RF_FIR DB 0FFH,57,22,"FIR",0DH
RF_IIR DB 0FFH,57,22,"IIR",0DH
RFT_P1 DW OFFSET RFT_ORDER
       DW OFFSET RFT_ATTEN
RFT_P2 DW OFFSET RFT_ORDER1
       DW OFFSET RFT_ATTEN
RFT_UDF DB 0FFH,57H,52,23,64,23,0FFH,50H,7,0DH
RFT_ORDER DB 0FFH,56,23,"Order",0DH
RFT_ATTEN DB 0FFH,53,23,"Attenuation",0DH
RFT_ORDER1 DB 0FFH,52,23,"Coefficients",0DH
CHL_P DW OFFSET CHL_NONE
      DW OFFSET CHL_WGN
      DW OFFSET CHL_BSC
      DW OFFSET CHL_PM
CHL_UDF DB 0FFH,57H,68,16,78,18,0FFH,50H,7,0DH
CHL_NONE DB 0FFH,71,17,"None",0DH
CHL_WGN DB 0FFH,71,16,"White",0FFH,69,17,"Gaussian"
        DB 0FFH,71,18,"Noise",0DH
CHL_BSC DB 0FFH,72,17,"BSC",0DH
CHL_PM DB 0FFH,68,16,"Propagation",0FFH,71,17,"Model",0DH

SIG_CON1 DB 0FFH,50H,70H,0FFH,49,12,"──"
SIG_CON2 DB 0FFH,50H,70H,0FFH,66,12,"───────┐"
         DB 0FFH,73,13,"│"
SIG_CON5 DB 0FFH,50H,70H,0FFH,49,21,"──"
SIG_CON4 DB 0FFH,50H,70H,0FFH,73,20,"│"
     DB 0FFH,66,21,"───────┘"
     DB 0FFH,50H,70H,0FFH,50,3,"FINISH",0FFH,50H,0FH
     DB ":             F1"
TX1 DB 0FFH,50H,0FH,0FFH,50,4,"TRANSMITTER INPUT:  F2"
TX2 DB 0FFH,50H,0FH,0FFH,50,5,"TRANSMITTER OUTPUT: F3"
RX1 DB 0FFH,50H,0FH,0FFH,50,6,"RECEIVER INPUT:     F4"
RX2 DB 0FFH,50H,0FH,0FFH,50,7,"RECEIVER OUTPUT:    F5"
     DB 0FFH,79,25,0DH
SIG_CON3 DB 0FFH,50H,70H,0FFH,49,21,"──"
         DB 0FFH,50H,70H,0FFH,45,6,"FINISH",0FFH,50H,0FH,": F1"
         DB 0FFH,45,7,"PLOT:   F2"
         DB 0FFH,79,25,0DH
SIG_CON_M1 DB 2
           DB 49,21
           DB 50,21
           DB 8
           DB 45,6
           DB 50,6
           DB 10H
SIG_CON_KM1 DB 2
            DW F2_KEY
            DB 8
            DW F1_KEY
            DB 10H

SIG_CON_M2 DB 7
           DB 49,12
           DB 50,12
           DB 2
           DB 66,12
           DB 73,12
           DB 3
           DB 73,13
           DB 73,13
           DB 3
           DB 49,21
           DB 50,21
           DB 4
           DB 73,20
           DB 73,20
           DB 5
           DB 66,21
           DB 73,21
           DB 5
           DB 50,3
           DB 55,3
           DB 10H
SIG_CON_KM2 DB 5
            DW F5_KEY
            DB 4
            DW F4_KEY
            DB 5
            DW F3_KEY
            DB 3
            DW F2_KEY
            DB 2
            DW F1_KEY
            DB 10H

BER_HIS1 DB OFFH,50H,70H,OFFH,15,21,"——"
  DB OFFH,50H,70H,OFFH,11,6,"FINISH",OFFH,50H,OFH,": F1"
  DB OFFH,11,7,"PLOT:    F2"
  DB OFFH,79,25,ODH
BER_HIS_M1 DB 2
           DB 15,21
           DB 16,21
           DB 1
           DB 11,6
           DB 16,6
           DB 10H
BER_HIS_KM1 DB 2
            DW F2_KEY
            DB 1
            DW F1_KEY
            DB 10H

KEYBOARD_CONTROL_BUFFER DB 4
                        DB 0
                        DW 0
                        DW 0
                        DW 0
                        DW OFFSET MOUSE_HANDLER
```

```
STACK_POINTER DW ?
STACK_POINTER1 DW ?
STACK_POINTER3 DW ?

PUBLIC BIT_RATE,AMPLITUDE_SIN,AMPLITUDE_SW,SOU_NO,SF_BW_CF
PUBLIC CHL_NO,CHL_ER,SBU,MA_UP,NET_CON,SAF_TP,SOU_CON,MOD_CON
PUBLIC ECD_CON,CF_CON,RF_CON,DCD_CON,DEMOD_CON,CHL_CON,ITM_MA
PUBLIC ITM_S,S_NN,LC_BL,LC_UL,LC_S,ORDER_BW_CF,FIR_CF,MA_CON
PUBLIC PM_CONST,PM_CON,CF_BW_T,BER_HIS,SIG_CON,NET_OD_SAF,NET_OD_MA
PUBLIC NUMBER_ITERATION,SAF_RTG,REAL_TIME,PB_SN,MA_AMBF,MA_CMBF

NUMBER_OF_INTEGER EQU 10
NUMBER_OF_DATA EQU 73
N_B EQU 4002
LINK_NET DB 0 ; Link : 0
              ; Network : 1
SOU_CON DB 0 ; Undefined : 0
             ; Random bit : 1
             ; Sinusoidal : 2
             ; Square wave : 3
             ; White Gaussian : 4
MOD_CON DB 0 ; Undefined : 0
             ; BPSK : 1
             ; QPSK : 2
             ; 8-PSK : 3
             ; 16-QAM : 4
             ; 64-QAM : 5
             ; BFSK : 6
             ; 4-FSK : 7
             ; 8-FSK : 8
             ; None : 9
             ; Time domain BPSK : 10
ECD_CON DB 0 ; Undefined : 0
             ; None : 1
             ; (r=1/2,K=3) binary convolutional : 2
             ; (r=1/2,K=7) binary convolutional : 3
             ; Dual-3 : 4
             ; (15,9) Reed-Solomon : 5
             ; (255,223) ReeD-Solomon : 6
CF_CON DB 0 ; Undefined : 0
            ; None : 1
            ; Low-Pass : 2
            ; Butterworth : 3
            ; Chebychev : 4
            ; Elliptic : 5
            ; FIR : 6
            ; User : 7
RF_CON DB 0 ; Undefined : 0
            ; None : 1
            ; Low-Pass : 2
            ; Butterworth : 3
            ; Chebychev : 4
            ; Elliptic : 5
            ; FIR : 6
            ; User : 7
```

```
DCD_CON DB 0 ; Undefined : 0
             ; None : 1
             ; Soft Viterbi : 2
             ; Hard Viterbi : 3
             ; Reed-Solomon : 4
DEMOD_CON DB 0 ; Undefined : 0
               ; Soft : 1
               ; Hard : 2
               ; None : 3
CHL_CON DB 0 ; Undefined : 0
             ; None : 1
             ; White Gaussian Noise : 2
             ; BSC : 3
             ; Propagation Model : 4
CF_BW_T DB 8 DUP (?) ; 0 : Undefined
                     ; 1 : Order
                     ; 2 : Attenuation
PM_CON DB 0 ; Bit 1 : 0 : Open
            ;         1 : Suburban
            ; Bit 2 : 0 : No Foliage
            ;         1 : Foliaged
ORDER_BW_CF DB 5 DUP (?)
            DB 5 DUP (?) ; ORDER_CB_CF
            DB 5 DUP (?) ; ORDER_EP_CF
            DB 5 DUP (?) ; ORDER_LP_CF
FI_CF_O     DB 5 DUP (?) ; ORDER_FI_CF
            DB 5 DUP (?) ; ORDER_BW_RF
            DB 5 DUP (?) ; ORDER_CB_RF
            DB 5 DUP (?) ; ORDER_EP_RF
            DB 5 DUP (?) ; ORDER_LP_RF
FI_RF_O     DB 5 DUP (?) ; ORDER_FI_RF
AMPLITUDE_SIN DB 15 DUP (?)
FREQUENCY_SIN DB 15 DUP (?)
AMPLITUDE_SW DB 15 DUP (?)
FREQUENCY_SW DB 15 DUP (?)
BIT_RATE DB 15 DUP (?)
SOU_NO   DB 15 DUP (?)
CHL_NO   DB 15 DUP (?)
CHL_ER   DB 15 DUP (?)
PM_CONST DB 135 DUP (?) ; Transmitter Antenna Height,
   ; Receiver Antenna Height, Transmitter Average Power,
   ; Transmitter Antenna Gain, Receiver Antenna Gain,
   ; Carrier Frequency, Distance, Receiver Noise Temperature,
   ; Receiver Bandwidth
SF_BW_CF    DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?) ; SF_CB_CF
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?) ; SF_EP_CF
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?) ; SF_FI_CF
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?) ; SF_BW_RF
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?) ; SF_CB_RF
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?) ; SF_EP_RF
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?) ; SF_FI_RF
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DB 15 DUP (?)
            DW 20 DUP (?) ; Guard space
FIR_CF DW 99
       DB 14
       DB 1400 DUP (?)
       DW 99 ; FIR_RF
       DB 14
       DB 1400 DUP (?)

BER_HIS DB 0 ; None : 0
             ; Coded : 1
             ; Uncoded : 2
SIG_CON DB 0 ; None : 0
             ; Modulator Output : 1
             ; Channel Filter Output : 2
             ; Channel Output : 4
             ; Receiver Filter Output : 8
SETUP DB 0 ; None : 0
           ; Coded : 1
           ; Uncoded : 2
NUMBER_ITERATION DB 20 DUP (?)

NETCON_C DB 0FFH,57H,0,9,4FH,24,0DH
NETCON_M DB 0FFH,0,9,0FFH,50H,0FH,"Type of Network: ",0DH
NETCON_SAF DB 0FFH,17,9,"Store-and-Forward"
  DB 0DH
NETCON_MA DB 0FFH,17,9,"Multiple-Access  "
  DB 0DH
NETCON_UD DB 0FFH,17,9,"Undefined        "
  DB 0DH
NETCON_MA_M DB 0FFH,0,10,0FFH,50H,0FH,"Type of Protocol: ",0DH
NETCON_MA_A DB 0FFH,18,10
  DB "ALOHA       ",0DH
NETCON_MA_TCR DB 0FFH,18,10
  DB "Tree        ",0DH
NETCON_MA_CSMA DB 0FFH,18,10
  DB "CSMA        ",0DH
NETCON_MA_UD DB 0FFH,18,10
  DB "Undefined                ",0DH
NETCON_TP_M DB 0FFH,0,10,0FFH,50H,0FH,"Type of Topology: ",0DH
NETCON_TP_S DB 0FFH,18,10
  DB "Star               ",0DH
NETCON_TP_UL DB 0FFH,18,10
  DB "Unidirectional Loop",0DH
NETCON_TP_BL DB 0FFH,18,10
  DB "Bidirectional Loop ",0DH
NETCON_TP_UD DB 0FFH,18,10
  DB "Undefined          ",0DH
NETCON_RG_M DB 0FFH,0,11,0FFH,50H,0FH
  DB "Type of Routing Algorithm: ",0DH
NETCON_RG_S DB 0FFH,27,11
  DB "Shortest-Path",0DH
NETCON_RG_R DB 0FFH,27,11
  DB "Random       ",0DH
NETCON_RG_UD DB 0FFH,27,11
  DB "Undefined    ",0DH
REAL_TIME_M DB 0FFH,0,12,0FFH,50H,0FH
  DB "Real Time Animation: ",0DH
REAL_TIME_ON DB 0FFH,21,12
  DB "On ",0DH
REAL_TIME_OFF DB 0FFH,21,12
  DB "Off",0DH

NC_N_B EQU 1344
NUMBER_OF_INTEGER2 EQU 3
NET_CON DB 0 ; 0 : Unknown
```

```
             ; 1 : Store-and-forward
             ; 2 : Multiple-access
SAF_TP DB 0 ; 0 : Unknown
            ; 1 : Star
            ; 2 : Unidirectional loop
            ; 3 : Bidirectional loop
SAF_RTG DB 0 ; 0 : Unknown
             ; 1 : Shortest path routing
             ; 2 : Random routing
MA_CON DB 0 ; 0 : Unknown
            ; 1 : ALOHA
            ; 2 : Tree collision resolution
            ; 3 : CSMA
S_NN DB 5 DUP (?)
MA_UP DB 5 DUP (?)
MA_NC DB 5 DUP (?)
MA_AMBF DB 10 DUP (?)
MA_CMBF DB 10 DUP (?)
        DB 10 DUP (?) ; MA_CPR
ITM_S DW 64
      DB 9
      DB 630 DUP (?)
ITM_MA DW 20
       DB 9
       DB 200 DUP (?)
LC_S DW 16
     DB 9
     DB 180 DUP (?)
LC_UL DW 8
      DB 9
      DB 90 DUP (?)
LC_BL DW 16
      DB 9
      DB 180 DUP (?)
  DB 10 DUP (?)

NET_OD_SAF DB 0 ; None : 0
                ; Packet delay : 1
                ; Packet throughput : 2
NET_OD_MA DB 0 ; None : 0
               ; Packet delay : 1
               ; Packet throughput : 2
REAL_TIME DB 0 ; Off : 0
               ; On : 1
PB_NM DW 4
      DB 5
PB_SN DB 5 DUP (?)
PB_DN DB 5 DUP (?)
PD_SN DB 5 DUP (?)
PD_DN DB 5 DUP (?)

FILE_NAME DB 12
          DB 0
          DB 4
          DW 425H
          DW 425H
          DW 431H
          DW 0
          DW 0
          DB 0
          DW 0
          DW ?
          DB 0
          DW 0
          DB 0FFH,25H,4
          DB 0FFH,50H,7
      A10 DB 12 DUP (?)
          DB 0DH
ENTER_FILE DB 0FFH,0BH,4,0FFH,50H,7
           DB "Enter File Specification: ",0DH
FILE_HANDLE DW ?
FLP_NUMBER DW OFFSET FRACTION
           DW OFFSET EXPONENT
           DW 1245H
           DW 1265H
           DB "E"
           DW 62FH
           DB 7
           DB 0
           DW ?
           DB 20H
           DW 0
           DW ?
           DW 3 DUP(?)
FRACTION DB 8
         DB 0
         DB 0
         DW 62EH
         DW 625H
         DW 62EH
         DW MINUS_KEY
         DW MINUS_KEY_NORMAL
         DB 0
         DW 0
         DW ?
         DB 1
         DW 0
         DB 0FFH,25H,6
         DB 0FFH,50H,7
         DB 8 DUP (?)
         DB 0DH
EXPONENT DB 3
         DB 0
         DB 0
         DW 632H
         DW 630H
         DW 632H
         DW MINUS_KEY
         DW MINUS_KEY_NORMAL
         DB 2
         DW 0
         DW ?
         DB 1
         DW 0
         DB 0FFH,24H,6
         DB 0FFH,50H,7
         DB 3 DUP (?)
         DB 0DH
FLP_NUMBER2 DW OFFSET FRACTION2
           DW OFFSET EXPONENT2
           DW 1245H
           DW 1265H
           DB "E"
           DW 52FH
           DB 7
           DB 0
           DW ?
           DB 20H
           DW 0
           DW ?
           DW 3 DUP(?)
FRACTION2 DB 5
         DB 0
         DB 0
         DW 52EH
         DW 525H
         DW 52EH
         DW MINUS_KEY
         DW MINUS_KEY_NORMAL
         DB 20H
         DW 0
         DW ?
         DB 1
         DW 0
         DB 0FFH,25H,5
         DB 0FFH,50H,7
         DB 5 DUP (?)
         DB 0DH
EXPONENT2 DB 2
         DB 0
         DB 0
         DW 533H
         DW 530H
         DW 533H
         DW MINUS_KEY
         DW MINUS_KEY_NORMAL
         DB 2
         DW 0
         DW ?
         DB 1
         DW 0
         DB 0FFH,25H,5
         DB 0FFH,50H,7
         DB 2 DUP (?)
         DB 0DH
```

```
INTEGERN DB 3
         DB 0
         DB 9
         DW 527H
         DW 51EH
         DW 527H
         DW MINUS_KEY
         DW MINUS_KEY_NORMAL
         DB 22H
         DW 0
         DW OFFSET TY_BEEP
         DB 2
         DW 0
         DB 0FFH,1EH,5
         DB 0FFH,50H,7
         DB 20H,31H,20H
         DB 0DH
INTEGERN1 DB 8
         DB 0
         DB 9
         DW 527H
         DW 51EH
         DW 527H
         DW MINUS_KEY
         DW MINUS_KEY_NORMAL
         DB 22H
         DW 0
         DW OFFSET TY_BEEP
         DB 2
         DW 0
         DB 0FFH,1EH,5
         DB 0FFH,50H,7
         DB 20H,30H,0,0,0,0,0,0
         DB 0DH

NB_ITERA DB 14
         DB 0
         DB 9
         DW 532H
         DW 529H
         DW 532H
         DW MINUS_KEY
         DW MINUS_KEY_NORMAL
         DB 22H
         DW 0
         DW OFFSET TY_BEEP
         DB 2
         DW 0
         DB 0FFH,29H,5
         DB 0FFH,50H,7
         DB 20H,31H
         DB 12 DUP (?)
         DB 0DH
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```
ENTER_AMPL DB 0FFH,0CH,6,0FFH,50H,7
           DB "Sampling Frequency (Hz): ",0DH
ENTER_FREQ DB 0FFH,0CH,6,0FFH,50H,7
           DB "Sinusoid Frequency (Hz): ",0DH
ENTER_BITR DB 0FFH,0FH,6,0FFH,50H,7
           DB "Enter Bit Rate (bps): ",0DH
ENTER_NO DB 0FFH,11,5,0FFH,50H,7
  DB "Received Signal Power to Noise"
  DB 0FFH,11,6,"Power Density Ratio (dB): ",0DH
S_P_NUMB DB 0FFH,0,2,0FFH,50H,7,"Press the ",22H,"E",22H," key to"
         DB " toggle between the mantissa and exponent. Press the "
         DB 22H,"-",22H
         DB 0FFH,0,3,"key to change the sign of the "
         DB "exponent when the exponent field is active."
S_INTEGE DB 0FFH,0,4,0FFH,50H,7,"Press the Enter key to accept "
         DB "the number.",0DH
S_NUMBER DB 0FFH,0,0,0FFH,50H,7,"Press the ",22H,"E",22H," key to"
         DB " toggle between the mantissa and exponent. Press the "
         DB 22H,"-",22H
         DB 0FFH,0,1,"key to change the sign of the active field."
         DB 0FFH,0,4,0FFH,50H,7,"Press the Enter key to accept "
         DB "the number.",0DH
A_NUMBER DB 0FFH,0,0,0FFH,50H,7,"Press the ",22H,"E",22H," key to"
         DB " toggle between the mantissa and exponent. Press the "
         DB 22H,"-",22H
         DB 0FFH,0,1,"key to change the sign of the active field."
         DB " Press the ",22H,"F1",22H," key "
         DB "to accept the"
         DB 0FFH,0,2,"numbers.",0DH
A_P_NUMB DB 0FFH,0,0,0FFH,50H,7,"Press the ",22H,"E",22H," key to"
         DB " toggle between the mantissa and exponent. Press the "
         DB 22H,"-",22H
         DB 0FFH,0,1,"key to change the sign of the exponent when "
         DB "the exponent field is active."
         DB 0FFH,0,2,"Press the ",22H,"F1",22H," key "
         DB "to accept the numbers.",0DH
LINK_C_UNIT DB 0FFH,0,3,"The unit of the link capacities is "
  DB "packets/sec.",0DH
ITM_UNIT DB 0FFH,0,3,"The unit of the input traffic is "
  DB "packets/sec.",0DH
ITM_UNIT1 DB 0FFH,0,3,"The unit of the input traffic is "
  DB "packets/slot.",0DH
S_NI DB 0FFH,9,5,0FFH,50H,7
     DB "Maximum Simulation Time: ",0DH
E_ORDER DB 0FFH,18H,5,0FFH,50H,7
        DB "Enter Order: ",0DH
E_ORDER_ODD DB 0FFH,10,5,0FFH,50H,7
        DB "Enter Order (Odd Integer): ",0DH
E_SAMPLE DB 0FFH,6,6,0FFH,50H,7
         DB "Enter Sampling Frequency (Hz): ",0DH
E_CUTOFF DB 0FFH,7,6,0FFH,50H,7
  DB "Enter Cutoff Frequency (Hz): ",0DH
E_PASEDG DB 0FFH,0,6,0FFH,50H,7
  DB "Enter Passband Edge Frequency (Hz): ",0DH
E_STOEDG DB 0FFH,0,6,0FFH,50H,7
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  DB "Enter Stopband Edge Frequency (Hz): ",0DH
E_SA DB 0FFH,4,6,0FFH,50H,7
     DB "Enter Stopband Attenuation (dB): ",0DH
E_PA DB 0FFH,4,6,0FFH,50H,7
     DB "Enter Passband Attenuation (dB): ",0DH
ENTER_ER DB 0FFH,16,6,0FFH,50H,7
         DB "Enter Bit Error Rate: ",0DH
TAH DB 0FFH,5,6,0FFH,50H,7
    DB "Transmitter Antenna Height (m): ",0DH
RAH DB 0FFH,8,6,0FFH,50H,7
    DB "Receiver Antenna Height (m): ",0DH
TAP DB 0FFH,0,6,0FFH,50H,7
    DB "Average Transmitter Power (in watts): ",0DH
TAG DB 0FFH,6,6,0FFH,50H,7
    DB "Transmitter Antenna Gain (dB): ",0DH
RAG DB 0FFH,9,6,0FFH,50H,7
    DB "Receiver Antenna Gain (dB): ",0DH
CFM DB 0FFH,13,6,0FFH,50H,7
    DB "Carrier Frequency (MHz):",0DH
DBTR DB 0FFH,21,6,0FFH,50H,7
    DB "Distance (km):",0DH
RNT DB 0FFH,2,6,0FFH,50H,7
    DB "Enter Receiver Noise Power (dBm): ",0DH
RBW DB 0FFH,7,6,0FFH,50H,7
    DB "Receiver Noise Bandwidth (Hz):",0DH
IL_FIR DB 0FFH,56H,5,"J",0FFH,56H,5,"K",0FFH,57H,0,3,79,4
       DB 0FFH,27,3,"Illegal FIR data file!"
       DB 0FFH,27,4,"Press any key to continue.",0FFH,79,25,0DH
IL_COF DB 0FFH,56H,5,"J",0FFH,56H,5,"K",0FFH,57H,0,3,79,4
       DB 0FFH,22,3,"Illegal configuration data file!"
       DB 0FFH,22,4,"Press any key to continue.",0FFH,79,25,0DH
O_ERROR DB 0FFH,57H,0,5,4FH,5,0FFH,0,5
        DB "The order must be a positive integer. Press any "
        DB "key to continue.",0FFH,56H,5,"J",0FFH,56H,5,"M"
        DB 0FFH,79,25,0DH
O_ERROR_E DB 0FFH,57H,0,5,4FH,5,0DH
I_ERROR DB 0FFH,57H,0,5,4FH,5,0FFH,0,5
        DB "The number of iterations must be a positive integer."
        DB " Press any "
        DB "key to continue.",0FFH,56H,5,"J",0FFH,56H,5,"M"
        DB 0FFH,79,25,0DH
ENTER_UP DB 0FFH,11,5,0FFH,50H,7
  DB "Enter Number of Stations: ",0DH
ENTER_NC DB 0FFH,11,5,0FFH,50H,7
  DB "Enter Number of Channels: ",0DH
ENTER_NN DB 0FFH,14,5,0FFH,50H,7
  DB "Enter Number of Nodes: ",0DH
ENTER_AMBF DB 0FFH,2,5,0FFH,50H,7
  DB "Maximum Backoff Delay (slots): ",0DH
ENTER_PR DB 0FFH,14,5,0FFH,50H,7
  DB "Propagation Ratio: ",0DH
NN_ERROR DB 0FFH,57H,0,5,4FH,5,0FFH,0,5
         DB "The number of nodes must be a positive integer "
         DB "greater than 1 and less than 9."
         DB 0FFH,56H,5,"J",0FFH,56H,5,"M"
         DB 0FFH,79,25,0DH
UP_ERROR DB 0FFH,57H,0,5,4FH,5,0FFH,0,5
         DB "The number of stations must be a positive integer "
         DB "less than 21."
         DB 0FFH,56H,5,"J",0FFH,56H,5,"M"
         DB 0FFH,79,25,0DH
NC_ERROR DB 0FFH,57H,0,5,4FH,5,0FFH,0,5
         DB "The number of channels must be a positive integer "
         DB "less than 11."
         DB 0FFH,56H,5,"J",0FFH,56H,5,"M"
         DB 0FFH,79,25,0DH
LEFT_F DB 0FFH,50H,0FH,0FFH,0,5
       DB "1  ",0FFH,0,6
       DB "2  ",0FFH,0,7
       DB "3  ",0FFH,0,8
       DB "4  ",0FFH,0,9
       DB "5  ",0FFH,0,10
       DB "6  ",0FFH,0,11
       DB "7  ",0FFH,0,12
       DB "8  "
       DB 0DH

A_FLP_S DB 0FFH,50H,0FH
        DB 0FFH,59H,0,3,20,77,"┌┐┘ └─│",0DH
        DB 13
        DB 2
        DB 1
        DW 0
        DW 5
   A_N1 DW 99
        DB ?
        DB ?
        DB 0FFH
        DW ?
        DB 0FFH,50H,0FH
        DB 7 DUP (?)
A_FLP_NUMBER DW 99
             DW OFFSET A_FLP_BUFFER
             DW 0
             DB 0
             DW ?
             DW ?
             DB 3 DUP (?)
             DB 70H
             DW F1_KEY
             DB 0FFH,0,3,0FFH,50H,70H,"FINISH",0DH
             DB 1,0,3,5,3,0
          C1 DW 99 DUP (?)
A_FLP_BUFFER DB 9400 DUP (?)
A_FLP_S2 DB 0FFH,50H,0FH
        DB 0FFH,59H,0,4,8,77,"┌┐┘ └─│",0DH
        DB 8
        DB 1
        DB 1
        DW 1
        DW 8
   A_N2 DW 64
        DB ?
        DB ?
        DB 0FFH
        DW ?
        DB 0FFH,50H,0FH
        DB 7 DUP (?)
A_FLP_S3 DB 0FFH,50H,0FH
        DB 0FFH,59H,0,4,8,77,"┌┐┘└─│",0DH
        DB 8
        DB 1
        DB 1
        DW 1
        DW 8
        DW 64
        DB ?
        DB ?
        DB 0FFH
        DW ?
        DB 0FFH,50H,0FH
        DB 7 DUP (?)
A_FLP_NUMBER2 DW 64
             DW OFFSET A_FLP_BUFFER2
             DW 0
             DB 0
             DW ?
             DW ?
             DB 3 DUP (?)
             DB 70H
             DW F1_KEY
             DB 0FFH,0,4,0FFH,50H,70H,"FINISH",0DH
             DB 1,0,4,5,4,0
         C22 DW 64 DUP (?)
A_FLP_BUFFER2 DB 6580 DUP (?)
A_FLP_NUMBER3 DW 8
             DW OFFSET A_FLP_BUFFER3
             DW 0
             DB 0
             DW ?
             DW ?
             DB 3 DUP (?)
             DB 70H
             DW F1_KEY
             DB 0FFH,1DH,5,0FFH,50H,70H,"FINISH",0DH
             DB 1,1DH,5,22H,5,0
         C23 DW 64 DUP (?)
A_FLP_BUFFER3 DB 720 DUP (?)

A_FDP_NUMBER DW 4
             DW OFFSET A_FDP_BUFFER
             DW 0
             DB 3
             DW OFFSET FUNCTION_KEY_HANDLER8
             DW OFFSET MOUSE_HANDLER8
             DB 0
             DB 70H
             DW F1_KEY
             DB 0FFH,30,5,0FFH,50H,70H,"FINISH",0DH
             DB 1,35,7,40,7,0
         DC1 DW 4 DUP (?)
A_FDP_BUFFER DB 150 DUP (?)

A_FLP_BOUND DB 0FFH,59H,17H,7,8,15,"┌┐┘└─│"
            DB 0FFH,22,8,"1",26,"2 "
            DB 0FFH,22,9,"2",26,"3 "
            DB 0FFH,22,10,"3",26,"4 "
            DB 0FFH,22,11,"4",26,"5 "
            DB 0FFH,22,12,"5",26,"6 "
            DB 0FFH,22,13,"6",26,"7 "
            DB 0FFH,22,14,"7",26,"8 "
            DB 0FFH,22,15,"8",26,"1 "
            DB 0DH
A_FLP_NUMBER4 DW 16
             DW OFFSET A_FLP_BUFFER4
             DW 0
             DB 0
             DW ?
             DW ?
             DB 3 DUP (?)
             DB 70H
             DW F1_KEY
             DB 0FFH,22H,5,0FFH,50H,70H,"FINISH",0DH
             DB 1,22H,5,27H,5,0
         C24 DW 64 DUP (?)
A_FLP_BUFFER4 DB 1440 DUP (?)
A_FLP_BOUND2 DB 0FFH,59H,12,7,8,15,"┌┐┘└─│"
            DB 0FFH,11,8,"1",26,"2 "
            DB 0FFH,11,9,"2",26,"3 "
            DB 0FFH,11,10,"3",26,"4 "
            DB 0FFH,11,11,"4",26,"5 "
            DB 0FFH,11,12,"5",26,"6 "
            DB 0FFH,11,13,"6",26,"7 "
            DB 0FFH,11,14,"7",26,"8 "
            DB 0FFH,11,15,"8",26,"1 ",0DH
A_FLP_BOUND3 DB 0FFH,59H,44,7,8,15,"┌┐┘└─│"
            DB 0FFH,43,8,"1",27,"2 "
            DB 0FFH,43,9,"2",27,"3 "
            DB 0FFH,43,10,"3",27,"4 "
            DB 0FFH,43,11,"4",27,"5 "
            DB 0FFH,43,12,"5",27,"6 "
            DB 0FFH,43,13,"6",27,"7 "
            DB 0FFH,43,14,"7",27,"8 "
            DB 0FFH,43,15,"8",27,"1 "
            DB 0DH
A_FLP_BOUND4 DB 0FFH,59H,12,7,8,15,"┌┐┘└─│"
            DB 0FFH,11,8,"2",26,"1 "
            DB 0FFH,11,9,"3",26,"1 "
            DB 0FFH,11,10,"4",26,"1 "
            DB 0FFH,11,11,"5",26,"1 "
            DB OFFH,11,12,"6",26,"1 "
            DB OFFH,11,13,"7",26,"1 "
            DB OFFH,11,14,"8",26,"1 "
            DB ODH
 A_FLP_BOUND5 DB OFFH,59H,44,7,8,15,"┌┐┘└─│"
            DB OFFH,43,8,"1",26,"2 "
            DB OFFH,43,9,"1",26,"3 "
            DB OFFH,43,10,"1",26,"4 "
            DB OFFH,43,11,"1",26,"5 "
            DB OFFH,43,12,"1",26,"6 "
            DB OFFH,43,13,"1",26,"7 "
            DB OFFH,43,14,"1",26,"8 "
            DB ODH

    LSD DB 1
        DW CONST
        DW OFFSET SBU
        DW ?
        DW ?
        DB 1
        DW OFFSET LSD1

    LSD1 DW OFFSET A3
         DW CONST
         DB 1
         DB ?
         DW ?
         DW OFFSET A4
         DW CONST
         DW OFFSET FCB1
         DW CONST
         DW OFFSET FCB2
         DW CONST
         DW OFFSET DISBU
         DW CONST

    A3 DB "A:\COMMAND.COM",0
    A4 DB 1," ",ODH
    FCB1 DB 30H DUP (?)
    FCB2 DB 30H DUP (?)
    DISBU DB 200 DUP (?)

 SBU DB 4000 DUP (?)
 TY_BEEP1 DB OFFH,56H,5,"K",OFFH,56H,5,"L",ODH
CONST ENDS

EXTRN INITIALIZE_FUNCTION_CONTROL:NEAR,FUNCTION_CONTROL:NEAR
EXTRN GET_KEYBOCOD2:NEAR,MONITOR_TYPE:NEAR
EXTRN CLEAR_BUFFER_GET_KEY:NEAR,CLEAR_BUFFER:NEAR
EXTRN RESET_MONITOR_TYPE:NEAR,CLS:NEAR,CURSER_POSITION:NEAR
EXTRN CURRENT_CURSER:NEAR,SQUARE_INDEX:NEAR
EXTRN DOUBLE_DISPLAY:NEAR,DOUBLE_DIS_LINE:NEAR
EXTRN SAVE_SCREEN:NEAR,RECOVER_SCREEN:NEAR,A_FLP_EDITOR:NEAR
EXTRN DOUBLE_DIS_LINE_OFF:NEAR
EXTRN SB_MOUSE_INPUT:NEAR,MOUSE_SETUP:NEAR,MOUSE_END:NEAR
EXTRN MOUSE_FUN_I:NEAR,SET_MOUSE_CONFIG:NEAR

EXTRN LINE_EDITOR:NEAR,GET_MOUSE_STATE:NEAR
EXTRN FLP_NUMBER_EDITOR:NEAR,FDP_NUMBER_EDITOR:NEAR
EXTRN LFLP_ASC:NEAR,ULFLP_ASC:NEAR,LFDP_ASC:NEAR,ULFDP_ASC:NEAR
EXTRN LAF_ASC:NEAR,ULAF_ASC:NEAR,A_FDP_EDITOR:NEAR,LAD_ASC:NEAR
EXTRN ULAD_ASC:NEAR,ERASE_AD_LAST:NEAR,CLEAR_BUFFER_GET_KEY2:NEAR
EXTRN KEY_FUN_I:NEAR

EXTRN OPEN_FILE_READ:NEAR,CREATE_FILE:NEAR
EXTRN SET_RETURN_ADDRESS:NEAR,SET_CRITICAL_ADDRESS:NEAR
EXTRN READ_FROM_FILE:NEAR,CLOSE_FILE:NEAR,WRITE_TO_FILE:NEAR
EXTRN GENERATE_PARITY:NEAR,RELEASE_MEMORY:NEAR,LOAD_PROGRAM:NEAR
EXTRN GET_PSP_SEGMENT:NEAR

EXTRN RUN_SIMULATE:NEAR,CI_S1:NEAR,RE_S1:NEAR,POSTRUN_LINK:NEAR


CODE SEGMENT 'CODE' PUBLIC
   ASSUME CS:CODE,DS:CONST,ES:NOTHING,SS:STACK

   PUBLIC NUMERIC_NUM_LOCK,NUMERIC_NUM_NOT_LOCK

   LINKNET PROC FAR
      PUSH DS
      XOR AX,AX
      PUSH AX
      MOV SI,2CH
      MOV SI,DS:[SI]
      PUSH SI
      CALL RELEASE_MEMORY
      POP SI
      MOV AX,CONST
      MOV DS,AX
      MOV ES,AX
      MOV ENVIRON,SI
      CLD
      MOV STACK_POINTER,SP
      CALL MONITOR_TYPE
      MOV AL,1
      CALL SET_MOUSE_CONFIG
      CALL MOUSE_SETUP
      CALL COEF_EDIT_SETUP
      CALL CLS
      MOV SI,OFFSET LOGO
      CALL DOUBLE_DIS_LINE
      CALL CLEAR_BUFFER_GET_KEY
    GET_KEY1:
      CALL CLS
      MOV SI,OFFSET ROOT_CONTROL
      CALL INITIALIZE_FUNCTION_CONTROL
    GET_KEY:
      MOV SI,OFFSET KEYBOARD_CONTROL_BUFFER
      CALL GET_KEYBOCOD2
   JAE GET_KEY
   MOV SI,OFFSET ROOT_CONTROL
   CALL FUNCTION_CONTROL
   JMP GET_KEY
 RETURN_DOS:
   CALL MOUSE_END
   CALL RESET_MONITOR_TYPE
   CALL CLS
   MOV DX,0
   CALL CURSER_POSITION
   RET
LINKNET ENDP

COEF_EDIT_SETUP PROC NEAR
    MOV BX,OFFSET C1
    MOV DI,OFFSET A_FLP_BUFFER
    MOV CX,99
    MOV DX,40AH
  C2:
    MOV [BX],DI
    PUSH CX
    MOV CX,93
    MOV SI,OFFSET FLP_NUMBER
    REP MOVSB
    MOV ES:[DI-91],DI
    MOV ES:[DI-93],DI
    SUB WORD PTR ES:[DI-91],31
    SUB WORD PTR ES:[DI-93],67
    MOV ES:[DI-60],DX
    MOV ES:[DI-64],DX
    MOV ES:[DI-62],DX
    SUB WORD PTR ES:[DI-62],7
    MOV ES:[DI-24],DX
    MOV ES:[DI-26],DX
    MOV ES:[DI-28],DX
    ADD WORD PTR ES:[DI-24],4
    ADD WORD PTR ES:[DI-26],2
    ADD WORD PTR ES:[DI-28],4
    MOV ES:[DI-84],DX
    INC WORD PTR ES:[DI-84]
    CMP DL,70
    JC CE9
    MOV DL,0AH
    INC DH
    JMP CE10
  CE9:
    ADD DL,15
  CE10:
    INC BX
    INC BX
    POP CX
  LOOP C2

    MOV SI,OFFSET A_FLP_NUMBER
    MOV DI,OFFSET FIR_CF
  CALL ULAF_ASC
  MOV DI,OFFSET FIR_CF+1403
  CALL ULAF_ASC

  MOV SI,OFFSET FLP_NUMBER
  MOV DI,OFFSET AMPLITUDE_SIN
  MOV CX,NUMBER_OF_DATA
C3:
  CALL ULFLP_ASC
  ADD DI,15
LOOP C3

  MOV SI,OFFSET INTEGERN
  MOV DI,OFFSET ORDER_BW_CF
  MOV CX,NUMBER_OF_INTEGER
C4:
  CALL ULFDP_ASC
  ADD DI,5
LOOP C4

  MOV SI,OFFSET NB_ITERA
  MOV DI,OFFSET NUMBER_ITERATION
  CALL ULFDP_ASC

  MOV SI,OFFSET INTEGERN
  MOV DI,OFFSET S_NN
  MOV CX,NUMBER_OF_INTEGER2
C5:
  CALL ULFDP_ASC
  ADD DI,5
LOOP C5
  MOV DI,OFFSET S_NN
  MOV BYTE PTR [DI+1],"2"

  MOV SI,OFFSET INTEGERN1
  MOV DI,OFFSET MA_AMBF
  MOV CX,3
C765:
  CALL ULFDP_ASC
  ADD DI,10
LOOP C765

  MOV BX,OFFSET C22
  MOV DI,OFFSET A_FLP_BUFFER2
  MOV CX,64
  MOV DX,508H
CE21:
  MOV [BX],DI
  PUSH CX
  MOV CX,89
  MOV SI,OFFSET FLP_NUMBER2
  REP MOVSB
  MOV ES:[DI-87],DI
  MOV ES:[DI-89],DI
  SUB WORD PTR ES:[DI-87],30
  SUB WORD PTR ES:[DI-89],63
  MOV ES:[DI-56],DX
  MOV ES:[DI-60],DX
  MOV ES:[DI-58],DX
  SUB WORD PTR ES:[DI-58],4
  MOV ES:[DI-23],DX
  MOV ES:[DI-25],DX
  MOV ES:[DI-27],DX
  ADD WORD PTR ES:[DI-23],3
  ADD WORD PTR ES:[DI-25],2
  ADD WORD PTR ES:[DI-27],3
  MOV ES:[DI-80],DX
  INC WORD PTR ES:[DI-80]
  CMP DL,68
  JC CE22
  MOV DL,8
  INC DH
  JMP CE11
CE22:
  ADD DL,9
CE11:
  INC BX
  INC BX
  POP CX
LOOP CE21

  MOV SI,OFFSET A_FLP_NUMBER2
  MOV DI,OFFSET ITM_S
  CALL ULAF_ASC
  MOV SI,OFFSET A_FLP_NUMBER2
  MOV DI,OFFSET ITM_MA
  CALL ULAF_ASC

  MOV BX,OFFSET C23
  MOV DI,OFFSET A_FLP_BUFFER3
  MOV CX,8
  MOV DX,820H
CA21:
  MOV [BX],DI
  PUSH CX
  MOV CX,89
  MOV SI,OFFSET FLP_NUMBER2
  REP MOVSB
  MOV ES:[DI-87],DI
  MOV ES:[DI-89],DI
  SUB WORD PTR ES:[DI-87],30
  SUB WORD PTR ES:[DI-89],63
  MOV ES:[DI-56],DX
  MOV ES:[DI-60],DX
  MOV ES:[DI-58],DX
  SUB WORD PTR ES:[DI-58],4
  MOV ES:[DI-23],DX
  MOV ES:[DI-25],DX
  MOV ES:[DI-27],DX
  ADD WORD PTR ES:[DI-23],3
  ADD WORD PTR ES:[DI-25],2
  ADD WORD PTR ES:[DI-27],3
  MOV ES:[DI-80],DX
  INC WORD PTR ES:[DI-80]
  INC DH
  INC BX
  INC BX
  POP CX
LOOP CA21

  MOV SI,OFFSET A_FLP_NUMBER3
  MOV DI,OFFSET LC_UL
  CALL ULAF_ASC

  MOV BX,OFFSET C24
  MOV DI,OFFSET A_FLP_BUFFER4
  MOV CX,16
  MOV DX,815H
CB21:
  MOV [BX],DI
  PUSH CX
  MOV CX,89
  MOV SI,OFFSET FLP_NUMBER2
  REP MOVSB
  MOV ES:[DI-87],DI
  MOV ES:[DI-89],DI
  SUB WORD PTR ES:[DI-87],30
  SUB WORD PTR ES:[DI-89],63
  MOV ES:[DI-56],DX
  MOV ES:[DI-60],DX
  MOV ES:[DI-58],DX
  SUB WORD PTR ES:[DI-58],4
  MOV ES:[DI-23],DX
  MOV ES:[DI-25],DX
  MOV ES:[DI-27],DX
  ADD WORD PTR ES:[DI-23],3
  ADD WORD PTR ES:[DI-25],2
  ADD WORD PTR ES:[DI-27],3
  MOV ES:[DI-80],DX
  INC WORD PTR ES:[DI-80]
  CMP DL,30
  JC CB22
  MOV DL,15H
  INC DH
  JMP CB11
CB22:
  ADD DL,20H
CB11:
  INC BX
  INC BX
  POP CX
LOOP CB21

  MOV SI,OFFSET A_FLP_NUMBER4
  MOV DI,OFFSET LC_BL
```

```
        CALL ULAF_ASC
        MOV SI,OFFSET A_FLP_NUMBER4
        MOV DI,OFFSET LC_S
        CALL ULAF_ASC

        MOV BX,OFFSET DC1
        MOV DI,OFFSET A_FDP_BUFFER
        MOV CX,4
      CD1:
        MOV [BX],DI
        PUSH CX
        MOV SI,OFFSET INTEGERN
        MOV CX,31
        REP MOVSB
        POP CX
        INC BX
        INC BX
      LOOP CD1
        MOV DX,0C33H
        MOV DI,OFFSET A_FDP_BUFFER
        CALL SET_CUR
        ADD DI,31
        MOV DH,14
        CALL SET_CUR
        ADD DI,31
        MOV DH,14H
        CALL SET_CUR
        ADD DI,31
        MOV DH,16H
        CALL SET_CUR
        MOV SI,OFFSET A_FDP_NUMBER
        MOV DI,OFFSET PB_NM
        CALL ULAD_ASC
        MOV BYTE PTR [DI+4],"0"
        MOV BYTE PTR [DI+9],"0"
        MOV BYTE PTR [DI+14],"0"
        MOV BYTE PTR [DI+19],"0"
        RET


      SET_CUR:
        MOV [DI+3],DX
        ADD BYTE PTR [DI+3],2
        MOV [DI+5],DX
        MOV [DI+7],DX
        ADD BYTE PTR [DI+7],2
        MOV [DI+22],DX
        RET
    COEF_EDIT_SETUP ENDP

    MOUSE_HANDLER PROC NEAR
       TEST CH,1
       JZ TY12
       TEST BL,3
       JZ TY12
```

```
   MOV SI,OFFSET ROOT_CONTROL
   CALL SB_MOUSE_INPUT
   MOV SP,STACK_POINTER
   JMP GET_KEY
 TY12:
   RET
MOUSE_HANDLER ENDP

QUIT_HANDLER PROC NEAR
    MOV SI,OFFSET ROOT_STACK1
    MOV BYTE PTR [SI],1
    MOV WORD PTR [SI+3],OFFSET ROOT_STACK1+5
    MOV SI,OFFSET ROOT_STACK_MESS1
    MOV BYTE PTR [SI+15],0DH
    MOV SP,STACK_POINTER
    MOV AX,OFFSET GET_KEY1
    JMP AX
QUIT_HANDLER ENDP

EXIT_HANDLER PROC NEAR
    MOV AX,CONST
    MOV DS,AX
    MOV SP,STACK_POINTER
    MOV AX,OFFSET RETURN_DOS
    JMP AX
    RET
EXIT_HANDLER ENDP

DEMODULATOR_SET PROC NEAR
    MOV DEMOD_CON,AH
    CALL DISPLAY_DEMOD
    RET
DEMODULATOR_SET ENDP

RUN_S1 PROC NEAR
    PUSH AX
    MOV SI,OFFSET S_INTEGE
    CALL DOUBLE_DIS_LINE
  CF25:
    MOV SI,OFFSET S_NI
    CALL DOUBLE_DIS_LINE
    MOV DI,OFFSET NUMBER_ITERATION
    MOV SI,OFFSET NB_ITERA
    CALL LFDP_ASC
    CALL FDP_NUMBER_EDITOR
    MOV AX,OFFSET I_ERROR
    CALL ERROR_DETECT
    JC CF25
    CALL ULFDP_ASC
    POP AX
    CALL RUN_SIMULATE
    RET
RUN_S1 ENDP

ENCODER_SET PROC NEAR
```

```
    MOV ECD_CON,AH
    CALL ED_CONSISTENT
    CALL DISPLAY_ECD
    CALL DISPLAY_DCD
    CALL DISABLE_ED
    RET
ENCODER_SET ENDP

DECODER_SET PROC NEAR
    MOV DCD_CON,AH
    CALL DE_CONSISTENT
    CALL DISPLAY_ECD
    CALL DISPLAY_DCD
    CALL DISABLE_ED
    RET
DECODER_SET ENDP

ED_CONSISTENT PROC NEAR
    CMP ECD_CON,1
    JZ ESDP1
    CMP ECD_CON,2
    JZ ESDP2
    CMP ECD_CON,3
    JZ ESDP2
    CMP ECD_CON,5
    JZ ESDP3
    RET
  ESDP1:
    MOV DCD_CON,1
    RET
  ESDP2:
    CMP DCD_CON,2
    JNZ ESDP4
    RET
  ESDP4:
    CMP DCD_CON,3
    JNZ ESDP5
    RET
  ESDP5:
    MOV DCD_CON,0
    RET
  ESDP3:
    MOV DCD_CON,4
    RET
ED_CONSISTENT ENDP

DE_CONSISTENT PROC NEAR
    CMP DCD_CON,1
    JZ DSEP1
    CMP DCD_CON,2
    JZ DSEP2
    CMP DCD_CON,3
    JZ DSEP2
    CMP DCD_CON,4
    JZ DSEP3
    RET
  DSEP1:
    MOV ECD_CON,1
    RET
  DSEP2:
    CMP ECD_CON,2
    JNZ DSEP4
    RET
  DSEP4:
    CMP ECD_CON,3
    JNZ DSEP5
    RET
  DSEP5:
    MOV ECD_CON,0
    RET
  DSEP3:
    CMP ECD_CON,5
    JNZ DSEP5
    RET
DE_CONSISTENT ENDP

R_CONFIG_S1 PROC NEAR
    MOV STACK_POINTER1,SP
    CALL FILE_PREPARE
    MOV DX,OFFSET A10
    CALL OPEN_FILE_READ
    MOV FILE_HANDLE,AX
    MOV CX,N_B+2
    MOV BX,AX
    MOV DX,OFFSET SBU
    CALL READ_FROM_FILE
    MOV BX,FILE_HANDLE
    CALL CLOSE_FILE

    MOV SI,OFFSET SBU
    MOV CX,N_B
    CALL GENERATE_PARITY
    CMP [SI],AX
    JZ RE12
    MOV SI,OFFSET IL_COF
    CALL DOUBLE_DIS_LINE
    CALL CLEAR_BUFFER_GET_KEY
    CALL GET_MOUSE_STATE
    RET
  RE12:
    MOV SI,OFFSET SBU
    MOV DI,OFFSET LINK_NET
    MOV CX,N_B
    REP MOVSB
    CALL DISPLAY_CON
    CALL DISABLE_ED
    RET
R_CONFIG_S1 ENDP

FILE_PREPARE PROC NEAR
```

```
        MOV SI,OFFSET ENTER_FILE
        CALL DOUBLE_DIS_LINE
        MOV SI,OFFSET FILE_NAME
        CALL LINE_EDITOR
        PUSH DS
        MOV AX,CODE
        MOV DS,AX
        MOV SI,OFFSET ERROR_HANDLER
        CALL SET_RETURN_ADDRESS
        CALL SET_CRITICAL_ADDRESS
        POP DS
        MOV SI,OFFSET A10-1
        MOV AL,0DH
      R12:
        INC SI
        CMP [SI],AL
        JNZ R12
        MOV BYTE PTR [SI],0
        RET
    FILE_PREPARE ENDP

    S_CONFIG_S1 PROC NEAR
        MOV STACK_POINTER1,SP
        CALL FILE_PREPARE
        MOV DX,OFFSET A10
        CALL CREATE_FILE
        MOV FILE_HANDLE,AX

        MOV SI,OFFSET LINK_NET
        MOV DI,OFFSET SBU
        MOV CX,N_B
        REP MOVSB
        MOV SI,OFFSET SBU
        MOV CX,N_B
        CALL GENERATE_PARITY
        MOV [SI],AX

        MOV CX,N_B+2
        MOV BX,FILE_HANDLE
        MOV DX,OFFSET SBU
        CALL WRITE_TO_FILE
        MOV BX,FILE_HANDLE
        CALL CLOSE_FILE
        RET
    S_CONFIG_S1 ENDP

    R_NETCON_S1 PROC NEAR
        MOV STACK_POINTER1,SP
        CALL FILE_PREPARE
        MOV DX,OFFSET A10
        CALL OPEN_FILE_READ
        MOV FILE_HANDLE,AX
        MOV CX,NC_N_B+2
        MOV BX,AX
        MOV DX,OFFSET SBU
    CALL READ_FROM_FILE
    MOV BX,FILE_HANDLE
    CALL CLOSE_FILE

    MOV SI,OFFSET SBU
    MOV CX,NC_N_B
    CALL GENERATE_PARITY
    CMP [SI],AX
    JZ RE35
    MOV SI,OFFSET IL_COF
    CALL DOUBLE_DIS_LINE
    CALL CLEAR_BUFFER_GET_KEY
    CALL GET_MOUSE_STATE
    RET
  RE35:
    MOV SI,OFFSET SBU
    MOV DI,OFFSET NET_CON
    MOV CX,NC_N_B
    REP MOVSB
    CALL DISPLAY_NETCON
    RET
R_NETCON_S1 ENDP

S_NETCON_S1 PROC NEAR
    MOV STACK_POINTER1,SP
    CALL FILE_PREPARE
    MOV DX,OFFSET A10
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX

    MOV SI,OFFSET NET_CON
    MOV DI,OFFSET SBU
    MOV CX,NC_N_B
    REP MOVSB
    MOV SI,OFFSET SBU
    MOV CX,NC_N_B
    CALL GENERATE_PARITY
    MOV [SI],AX

    MOV CX,NC_N_B+2
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET SBU
    CALL WRITE_TO_FILE
    MOV BX,FILE_HANDLE
    CALL CLOSE_FILE
    RET
S_NETCON_S1 ENDP

SOURCE_SET PROC NEAR
    PUSH AX
    AND AH,0FH
    MOV SOU_CON,AH
    PUSH AX
    CALL DISPLAY_SOU
```

```
      MOV SI,OFFSET S_P_NUMB
      CALL DOUBLE_DIS_LINE
      POP AX
      CMP AH,2
      JAE S13
      POP AX
      MOV SI,OFFSET ENTER_BITR
      MOV DI,OFFSET BIT_RATE
      JMP S12
    S13:
      CMP AH,4
      POP AX
      JC S14
      MOV SI,OFFSET ENTER_NO
      MOV DI,OFFSET SOU_NO
      JMP S12
    S14:
      TEST AH,10H
      JZ S11
      MOV SI,OFFSET ENTER_AMPL
      AND AH,0FH
      CMP AH,2
      JNZ S33
      MOV DI,OFFSET AMPLITUDE_SIN
      JMP S12
    S33:
      MOV DI,OFFSET AMPLITUDE_SW
      JMP S12
    S11:
      MOV SI,OFFSET ENTER_FREQ
      AND AH,0FH
      CMP AH,2
      JNZ S34
      MOV DI,OFFSET FREQUENCY_SIN
      JMP S12
    S34:
      MOV DI,OFFSET FREQUENCY_SW
    S12:
      CALL DOUBLE_DIS_LINE
      CALL ENTER_NUMBER
      RET


  ENTER_NUMBER:
      MOV SI,OFFSET FLP_NUMBER
      PUSH DI
      CALL LFLP_ASC
      AND BYTE PTR [SI+12],0FEH
      MOV DI,[SI]
      AND BYTE PTR [DI+13],0CFH
      XOR BYTE PTR [DI+13],20H
      CALL FLP_NUMBER_EDITOR
      POP DI
      CALL ULFLP_ASC
      RET
```

```
SOURCE_SET ENDP

ENTER_NUMBER1 PROC NEAR
        MOV SI,OFFSET FLP_NUMBER
        PUSH DI
        CALL LFLP_ASC
        AND BYTE PTR [SI+12],0FEH
        MOV DI,[SI]
        AND BYTE PTR [DI+13],0CFH
        CALL FLP_NUMBER_EDITOR
        POP DI
        CALL ULFLP_ASC
        RET
ENTER_NUMBER1 ENDP

ORDER_SET PROC NEAR
        MOV SI,OFFSET CF_BW_T
        TEST AH,80H
        JZ OSP1
        ADD SI,4
    OSP1:
        MOV BL,1
        TEST AH,40H
        JZ OSP2
        MOV BL,2
    OSP2:
        PUSH AX
        AND AH,0FH
        MOV AL,AH
        SUB AL,3
        XOR AH,AH
        ADD SI,AX
        MOV BYTE PTR [SI],BL
        POP AX
        TEST AH,80H
        JZ OSP3
        CALL DISPLAY_RFT
        RET
    OSP3:
        CALL DISPLAY_CFT
        RET
ORDER_SET ENDP

L_COUNT_BYTE EQU 18
L_DATA_START EQU 27
L_SECOND_DATA EQU 28

FILTER_SET PROC NEAR
        MOV BH,AH
        MOV BL,AH
        AND AH,07H
        TEST BH,80H
        JNZ FS1
        CALL CHANNEL_FILTER_SET
        RET
```

```
  FS1:
    CALL RECEIVER_FILTER_SET
    RET

CHANNEL_FILTER_SET:
    PUSH BX
    MOV CF_CON,AH
    CALL DISPLAY_CF
  RF3:
    POP BX
    MOV AH,BH
    AND AH,0FH
    CMP AH,1
    JNZ CFOA9
    RET
  CFOA9:
    CMP AH,7
    JNZ CFOA10
    RET
  CFOA10:
    TEST BH,40H
    JNZ CFOA1
    CALL CF_ORDER_SET
    RET
  CFOA1:
    CALL CF_ATTENUATION_SET
    RET

CF_ORDER_SET:
    PUSH BX
    TEST BH,30H
    JNZ CF1
    MOV SI,OFFSET S_INTEGE
    CALL DOUBLE_DIS_LINE
    POP BX
    MOV DI,OFFSET ORDER_BW_CF
    CALL CF_DIAD2
  CF21:
    TEST BH,80H
    JZ CF31
    CMP RF_CON,6
    JNZ CF32
    JMP CF33
  CF31:
    CMP CF_CON,6
    JNZ CF32
  CF33:
    MOV SI,OFFSET E_ORDER_ODD
    JMP CF34
  CF32:
    MOV SI,OFFSET E_ORDER
  CF34:
    CALL DOUBLE_DIS_LINE
    MOV SI,OFFSET INTEGERN
    CALL LFDP_ASC
    CALL FDP_NUMBER_EDITOR
    MOV AX,OFFSET O_ERROR
    CALL ERROR_DETECT
    JC CF21
    CALL ULFDP_ASC
    RET
  CF1:
    MOV SI,OFFSET S_P_NUMB
    CALL DOUBLE_DIS_LINE
    POP BX
    MOV DI,OFFSET SF_BW_CF
    CALL CF_DIAD
    PUSH BX
    AND BH,30H
    CMP BH,10H
    JZ CF2
    CMP BH,20H
    JZ CF10
    POP BX
    MOV AH,BH
    AND AH,0FH
    CMP AH,6
    JNZ CF10
    CALL ENTER_COEF
    RET
  CF10:
    POP BX
    MOV SI,OFFSET E_CUTOFF
    ADD DI,15
    JMP CF3
  CF2:
    POP BX
    MOV SI,OFFSET E_SAMPLE
  CF3:
    CALL DOUBLE_DIS_LINE
    CALL ENTER_NUMBER
    RET

ERROR_DETECT:
    CMP BYTE PTR [SI+L_COUNT_BYTE],1
    JNZ CF22
    CALL ORDER_ERROR
    JMP CF23
  CF22:
    CMP BYTE PTR [SI+L_COUNT_BYTE],2
    JNZ CF24
    CMP BYTE PTR [SI+L_DATA_START+1],"0"
    JNZ CF24
    CALL ORDER_ERROR
  CF23:
    STC
    RET
  CF24:
    CLC
    RET
```

```
ORDER_ERROR:
    PUSH SI
    MOV SI,AX
    CALL DOUBLE_DIS_LINE
    CALL CLEAR_BUFFER_GET_KEY
    MOV SI,OFFSET O_ERROR_E
    CALL DOUBLE_DIS_LINE_OFF
    POP SI
    RET

CF_ATTENUATION_SET:
    PUSH BX
    MOV SI,OFFSET S_P_NUMB
    CALL DOUBLE_DIS_LINE
    POP BX
    MOV DI,OFFSET SF_BW_CF+30
    CALL CF_DIAD
    PUSH BX
    TEST BH,30H
    JNZ CF5
    MOV SI,OFFSET E_SAMPLE
    JMP CF6
  CF5:
    TEST BH,10H
    JNZ CF7
    MOV SI,OFFSET E_PA
    ADD DI,45
    JMP CF6
  CF7:
    TEST BH,20H
    JNZ CF8
    TEST BL,8
    JZ CF9
    MOV SI,OFFSET E_STOEDG
    ADD DI,30
    JMP CF6
  CF9:
    MOV SI,OFFSET E_PASEDG
    ADD DI,15
    JMP CF6
  CF8:
    MOV SI,OFFSET E_SA
    ADD DI,60
  CF6:
    CALL DOUBLE_DIS_LINE
    CALL ENTER_NUMBER
    POP BX
    RET



CF_DIAD:
    TEST BH,80H
    JZ CF973
    ADD DI,420
  CF973:
    MOV AH,BH
    AND AH,07H
    CMP AH,3
    JZ CF974
    CMP AH,5
    JZ CF975
    CMP AH,6
    JZ CF955
    ADD DI,105
    JMP CF974
  CF955:
    ADD DI,315
    JMP CF974
  CF975:
    ADD DI,210
  CF974:
    RET


CF_DIAD2:
    TEST BH,80H
    JZ CF976
    ADD DI,25
  CF976:
    MOV AH,BH
    AND AH,07H
    CMP AH,2
    JZ CF979
    CMP AH,3
    JZ CF977
    CMP AH,5
    JZ CF978
    CMP AH,6
    JZ CF980
    ADD DI,5
    JMP CF977
  CF979:
    ADD DI,15
    JMP CF977
  CF980:
    ADD DI,20
    JMP CF977
  CF978:
    ADD DI,10
  CF977:
    RET


RECEIVER_FILTER_SET:
    PUSH BX
    MOV RF_CON,AH
    CALL DISPLAY_RF
    MOV AX,OFFSET RF3
    JMP AX
    RET
FILTER_SET ENDP

SQ_INDEX_NR     EQU 7
SQ_INDEX_NC     EQU 8
SQ_INDEX_TNE    EQU 23
SQ_INDEX_NEPR   EQU 21
SQ_INDEX_NEPWR  EQU 25

ENTER_COEF PROC NEAR
    MOV SI,OFFSET FI_CF_O
    MOV DI,OFFSET FIR_CF
    TEST BH,80H
    JZ EC1
    MOV SI,OFFSET FI_RF_O
    ADD DI,1403
  EC1:
    CALL COMPUTE_NUMBER

    PUSH DI
    PUSH AX
    MOV SI,OFFSET A_FLP_S
    MOV DS:[SI+SQ_INDEX_TNE],AX
    MOV DL,5
    DIV DL
    CMP AH,0
    JZ G1
    INC AL
  G1:
    MOV DS:[SI+SQ_INDEX_NR],AL

    MOV SI,OFFSET SBU
    CALL SAVE_SCREEN
    CALL CLS
    MOV SI,OFFSET A_FLP_S
    CALL SQUARE_INDEX
    MOV SI,OFFSET A_NUMBER
    CALL DOUBLE_DIS_LINE
    POP AX
    POP DI
    MOV SI,OFFSET A_FLP_NUMBER
    CALL LAF_ASC
    MOV [SI],AX
    CALL A_FLP_EDITOR
    CALL ULAF_ASC
    MOV SI,OFFSET SBU
    CALL RECOVER_SCREEN
    RET

  COMPUTE_NUMBER:
    INC SI
    MOV DL,10
    XOR CH,CH
    XOR AX,AX
  CN1:
    CMP BYTE PTR DS:[SI],0DH
    JZ CN2
    MUL DL
    MOV CL,DS:[SI]
    SUB CL,30H
    ADD AX,CX
    INC SI
    JMP CN1
  CN2:
    RET
ENTER_COEF ENDP

CHANNEL_SET PROC NEAR
    MOV CHL_CON,AH
    CALL DISPLAY_CHL
    CMP CHL_CON,1
    JZ CS1
    CMP CHL_CON,4
    JZ CS1
    CMP CHL_CON,2
    JZ CS2
    MOV SI,OFFSET S_P_NUMB
    CALL DOUBLE_DIS_LINE
    MOV SI,OFFSET ENTER_ER
    MOV DI,OFFSET CHL_ER
    CALL DOUBLE_DIS_LINE
    CALL ENTER_NUMBER
    RET
  CS2:
    MOV SI,OFFSET S_NUMBER
    CALL DOUBLE_DIS_LINE
    MOV SI,OFFSET ENTER_NO
    MOV DI,OFFSET CHL_NO
    CALL DOUBLE_DIS_LINE
    CALL ENTER_NUMBER1
  CS1:
    RET
CHANNEL_SET ENDP

PM_DISPLAY PROC NEAR
    MOV CHL_CON,4
    CALL DISPLAY_CHL
    RET
PM_DISPLAY ENDP

PM_SET PROC NEAR
PM_CF:
    MOV SI,OFFSET CFM
    MOV DI,OFFSET PM_CONST+75
    JMP PM_SET1
PM_DS:
    MOV SI,OFFSET DBTR
    MOV DI,OFFSET PM_CONST+90
    JMP PM_SET1
PM_AT_H_T:
    MOV SI,OFFSET TAH
    MOV DI,OFFSET PM_CONST
    JMP PM_SET1
PM_AT_H_R:
    MOV SI,OFFSET RAH
    MOV DI,OFFSET PM_CONST+15
    JMP PM_SET1
PM_AT_G_T:
    MOV SI,OFFSET TAG
    MOV DI,OFFSET PM_CONST+45
    JMP PM_SET2
PM_AT_G_R:
    MOV SI,OFFSET RAG
    MOV DI,OFFSET PM_CONST+60
    JMP PM_SET2
PM_POWER:
    MOV SI,OFFSET TAP
    MOV DI,OFFSET PM_CONST+30
    JMP PM_SET1
PM_NOISE:
    MOV SI,OFFSET RNT
    MOV DI,OFFSET PM_CONST+105
    JMP PM_SET2
PM_AREA:
    AND AH,1
    AND PM_CON,0FEH
    XOR PM_CON,AH
    RET
PM_FOLIAGE:
    AND AH,2
    AND PM_CON,0FDH
    XOR PM_CON,AH
    RET
PM_BANDWIDTH:
    MOV SI,OFFSET RBW
    MOV DI,OFFSET PM_CONST+120
  PM_SET1:
    PUSH DI
    PUSH SI
    MOV SI,OFFSET S_P_NUMB
    CALL DOUBLE_DIS_LINE
    POP SI
    CALL DOUBLE_DIS_LINE
    POP DI
    CALL ENTER_NUMBER
    RET


  PM_SET2:
    PUSH DI
    PUSH SI
    MOV SI,OFFSET S_NUMBER
    CALL DOUBLE_DIS_LINE
    POP SI
    CALL DOUBLE_DIS_LINE
    POP DI
    CALL ENTER_NUMBER1
    RET
PM_SET ENDP

MODULATOR_SET PROC NEAR
    MOV MOD_CON,AH
    CALL DISPLAY_MOD
    RET
MODULATOR_SET ENDP

DISPLAY_CON PROC NEAR
    MOV SI,OFFSET CON_SCREEN
    CALL DOUBLE_DISPLAY
    CALL DISPLAY_SOU
    CALL DISPLAY_MOD
    CALL DISPLAY_ECD
    CALL DISPLAY_CF
    CALL DISPLAY_RF
    CALL DISPLAY_DCD
    CALL DISPLAY_DEMOD
    CALL DISPLAY_CHL
    RET
DISPLAY_CON ENDP

DISPLAY_MOD PROC NEAR
    MOV SI,OFFSET MOD_UDF
    MOV DI,OFFSET MOD_P
    MOV AL,MOD_CON
    CALL DISPLAY_ITEM
    CALL BLOCK_TEST
    RET
DISPLAY_MOD ENDP

DISPLAY_ECD PROC NEAR
    MOV SI,OFFSET ECD_UDF
    MOV DI,OFFSET ECD_P
    MOV AL,ECD_CON
    CALL DISPLAY_ITEM
    RET
DISPLAY_ECD ENDP

DISPLAY_SOU PROC NEAR
    MOV SI,OFFSET SOU_UDF
    MOV DI,OFFSET SOU_P
    MOV AL,SOU_CON
    CALL DISPLAY_ITEM
    CALL BLOCK_TEST
    RET
DISPLAY_SOU ENDP

DISPLAY_DCD PROC NEAR
    MOV SI,OFFSET DCD_UDF
    MOV DI,OFFSET DCD_P
    MOV AL,DCD_CON
    CALL DISPLAY_ITEM
    RET
DISPLAY_DCD ENDP

DISPLAY_CF PROC NEAR
    MOV SI,OFFSET CF_UDF
    MOV DI,OFFSET CF_P
    MOV AL,CF_CON
    CALL DISPLAY_ITEM
    CALL DISPLAY_CFT
    CALL BLOCK_TEST
    RET
DISPLAY_CF ENDP

BLOCK_TEST PROC NEAR
    MOV SI,OFFSET OD_S1+17
    AND BYTE PTR [SI],0FEH
    CMP MOD_CON,0
    JZ BLOCK_PLOT4
    CMP MOD_CON,1
    JZ BLOCK_PLOT4
    CMP MOD_CON,9
    JZ BLOCK_PLOT4
    CMP MOD_CON,10
    JZ BLOCK_PLOT4
    CMP CHL_CON,3
    JZ BLOCK_PLOT4
    CMP SOU_CON,2
    JZ BLOCK_PLOT4
    XOR BYTE PTR [SI],1
  BLOCK_PLOT4:

    MOV SI,OFFSET VD_S1+5
    MOV DI,OFFSET OD_S1+5
    AND BYTE PTR [SI],0FEH
    AND BYTE PTR [DI],0FEH
    CMP SOU_CON,1
    JNZ BLOCK_PLOT
    XOR BYTE PTR [SI],1
    XOR BYTE PTR [DI],1
  BLOCK_PLOT:

    MOV DI,OFFSET OD_S1+29
    AND BYTE PTR [DI],0FEH
    CMP CHL_CON,3
    JZ BLOCK_PLOT5
    CMP CF_CON,0
    JZ TEST21
    CMP CF_CON,1
    JZ TEST21
  UNBLOCK1:
    XOR BYTE PTR [DI],1
    JMP BLOCK_PLOT5
  TEST21:
    CMP RF_CON,0
    JZ BLOCK_PLOT5
    CMP RF_CON,1
    JNZ UNBLOCK1
  BLOCK_PLOT5:

    MOV SI,OFFSET VD_S1+17
    AND BYTE PTR [SI],0FEH
    CMP CF_CON,0
    JZ BLOCK_PLOT1
    CMP CF_CON,1
    JZ BLOCK_PLOT1
    CMP CHL_CON,3
    JZ BLOCK_PLOT1
    XOR BYTE PTR [SI],1
  BLOCK_PLOT1:

    MOV SI,OFFSET VD_S1+29
    AND BYTE PTR [SI],0FEH
    CMP RF_CON,0
    JZ BLOCK_PLOT2
    CMP RF_CON,1
    JZ BLOCK_PLOT2
    CMP CHL_CON,3
    JZ BLOCK_PLOT2
    XOR BYTE PTR [SI],1
  BLOCK_PLOT2:
    RET
BLOCK_TEST ENDP

DISPLAY_CFT PROC NEAR
    CMP CF_CON,0
    JNZ DCFT1
    RET
  DCFT1:
    CMP CF_CON,1
    JNZ DCFT2
    RET
  DCFT2:
    MOV SI,OFFSET CF_BW_T
    MOV BL,CF_CON
    SUB BL,3
    XOR BH,BH
    MOV AL,[SI+BX]
    MOV SI,OFFSET CFT_UDF
    MOV DI,OFFSET CFT_P1
    CMP BL,3
    JNZ DCT1
    MOV DI,OFFSET CFT_P2
  DCT1:
    CALL DISPLAY_ITEM
    RET
DISPLAY_CFT ENDP
```

```
DISPLAY_RF PROC NEAR
    MOV SI,OFFSET RF_UDF
    MOV DI,OFFSET RF_P
    MOV AL,RF_CON
    CALL DISPLAY_ITEM
    CALL DISPLAY_RFT
    CALL BLOCK_TEST
    RET
DISPLAY_RF ENDP

DISPLAY_RFT PROC NEAR
    CMP RF_CON,0
    JNZ DRFT1
    RET
  DRFT1:
    CMP RF_CON,1
    JNZ DRFT2
    RET
  DRFT2:
    MOV SI,OFFSET CF_BW_T+4
    MOV BL,RF_CON
    SUB BL,3
    XOR BH,BH
    MOV AL,[SI+BX]
    MOV SI,OFFSET RFT_UDF
    MOV DI,OFFSET RFT_P1
    CMP BL,3
    JNZ DRT1
    MOV DI,OFFSET RFT_P2
  DRT1:
    CALL DISPLAY_ITEM
    RET
DISPLAY_RFT ENDP

DISPLAY_DEMOD PROC NEAR
    MOV SI,OFFSET DEMOD_UDF
    MOV DI,OFFSET DEMOD_P
    MOV AL,DEMOD_CON
    CALL DISPLAY_ITEM
    RET
DISPLAY_DEMOD ENDP

DISPLAY_CHL PROC NEAR
    MOV SI,OFFSET CHL_UDF
    MOV DI,OFFSET CHL_P
    MOV AL,CHL_CON
    CALL DISPLAY_ITEM
    RET
DISPLAY_CHL ENDP

DISPLAY_ITEM PROC NEAR
    PUSH DI
    PUSH AX
    CALL DOUBLE_DIS_LINE
    POP AX
```

```
        POP SI
        CMP AL,0
        JNZ CON1
        RET
      CON1:
        DEC AL
        ADD AL,AL
        XOR AH,AH
        ADD SI,AX
        MOV SI,[SI]
        CALL DOUBLE_DIS_LINE
        RET
    DISPLAY_ITEM ENDP

    RECOVER_CON PROC NEAR
        MOV SI,OFFSET CON_SCREEN_CLEAR
        CALL DOUBLE_DIS_LINE
        RET
    RECOVER_CON ENDP

    SOURCE_POINTER PROC NEAR
        MOV SI,OFFSET T1
        JMP D1
    RECOVER_SOURCE:
        MOV SI,OFFSET S1
        JMP D1
    ENCODER_POINTER:
        MOV SI,OFFSET T2
        JMP D1
    RECOVER_ENCODER:
        MOV SI,OFFSET S2
        JMP D1
    MODULATOR_POINTER:
        MOV SI,OFFSET T3
        JMP D1
    RECOVER_MODULATOR:
        MOV SI,OFFSET S3
        JMP D1
    CHANNEL_S_POINTER:
        MOV SI,OFFSET T4
        JMP D1
    RECOVER_CHANNEL_S:
        MOV SI,OFFSET S4
      D1:
        CALL DOUBLE_DIS_LINE
        RET
    CHANNEL_POINTER:
        MOV SI,OFFSET T5
        JMP D1
    RECOVER_CHANNEL:
        MOV SI,OFFSET S5
        JMP D1
    DECODER_POINTER:
        MOV SI,OFFSET T6
        JMP D1
```

```
RECOVER_DECODER:
    MOV SI,OFFSET S6
    JMP D1
DEMODULATOR_POINTER:
    MOV SI,OFFSET T7
    JMP D1
RECOVER_DEMODULATOR:
    MOV SI,OFFSET S7
    JMP D1
RECEIVER_POINTER:
    MOV SI,OFFSET T8
    JMP D1
RECOVER_RECEIVER:
    MOV SI,OFFSET S8
    JMP D1
SOURCE_POINTER ENDP

NUMERIC_NUM_LOCK PROC NEAR
    RET
NUMERIC_NUM_LOCK ENDP

NUMERIC_NUM_NOT_LOCK PROC NEAR
    RET
NUMERIC_NUM_NOT_LOCK ENDP

ERROR_HANDLER PROC NEAR
    MOV AX,CONST
    MOV DS,AX
    MOV ES,AX
    MOV SP,STACK_POINTER1
    RET
ERROR_HANDLER ENDP

TY_BEEP PROC NEAR
    TEST BL,3
    JNZ TY93
    RET
  TY93:
    PUSH DX
    PUSH SI
    CALL CURRENT_CURSER
    PUSH DX
    MOV SI,OFFSET TY_BEEP1
    CALL DOUBLE_DIS_LINE
    POP DX
    CALL CURSER_POSITION
    POP SI
    POP DX
    RET
TY_BEEP ENDP

DUMMY_CALL PROC NEAR
    RET
DUMMY_CALL ENDP
```

```
FIR_SAVE1 PROC NEAR
    MOV STACK_POINTER1,SP
    PUSH AX
    CALL FILE_PREPARE
    MOV DX,OFFSET A10
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX
    IOP AX

    MOV DI,OFFSET SBU
    MOV SI,OFFSET ORDER_BW_CF+20
    TEST AH,80H
    JZ CSS1
    ADD SI,25
  CSS1:
    MOV CX,5
    REP MOVSB
    MOV SI,OFFSET SF_BW_CF+315
    TEST AH,80H
    JZ CSS2
    ADD SI,420
  CSS2:
    MOV CX,105
    REP MOVSB
    MOV SI,OFFSET FIR_CF
    TEST AH,80H
    JZ CSS3
    ADD SI,1403
  CSS3:
    MOV CX,1403
    REP MOVSB
    MOV SI,OFFSET SBU
    MOV CX,1513
    CALL GENERATE_PARITY
    MOV [SI],AX

    MOV CX,1515
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET SBU
    CALL WRITE_TO_FILE
    MOV BX,FILE_HANDLE
    CALL CLOSE_FILE
    RET
FIR_SAVE1 ENDP

FIR_RETRIEVE1 PROC NEAR
    MOV STACK_POINTER1,SP
    PUSH AX
    CALL FILE_PREPARE
    MOV DX,OFFSET A10
    CALL OPEN_FILE_READ
    MOV FILE_HANDLE,AX
    MOV CX,1515
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET SBU
```

```
        CALL READ_FROM_FILE
        MOV BX,FILE_HANDLE
        CALL CLOSE_FILE

        MOV SI,OFFSET SBU
        MOV CX,1513
        CALL GENERATE_PARITY
        CMP [SI],AX
        POP AX
        JZ CSS8
        MOV SI,OFFSET IL_FIR
        CALL DOUBLE_DIS_LINE
        CALL CLEAR_BUFFER_GET_KEY
        CALL GET_MOUSE_STATE
        RET
      CSS8:
        MOV SI,OFFSET SBU
        MOV DI,OFFSET ORDER_BW_CF+20
        TEST AH,80H
        JZ CSS4
        ADD DI,25
      CSS4:
        MOV CX,5
        REP MOVSB
        MOV DI,OFFSET SF_BW_CF+315
        TEST AH,80H
        JZ CSS5
        ADD DI,420
      CSS5:
        MOV CX,105
        REP MOVSB
        MOV DI,OFFSET FIR_CF
        TEST AH,80H
        JZ CSS6
        ADD DI,1403
      CSS6:
        MOV CX,1403
        REP MOVSB
        RET
    FIR_RETRIEVE1 ENDP

    BW_SET PROC NEAR
        TEST AH,80H
        JNZ BWS1
        AND AH,07H
        MOV CF_CON,AH
        CALL DISPLAY_CF
        RET
      BWS1:
        AND AH,07H
        MOV RF_CON,AH
        CALL DISPLAY_RF
        RET
    BW_SET ENDP
```

```
BERH_S1 PROC NEAR
    CALL DISPLAY_CON
    MOV SI,OFFSET BER_HIS1
    CALL DOUBLE_DIS_LINE
    CALL GET_MOUSE_STATE
  GET_M1:
    CALL CLEAR_BUFFER_GET_KEY2
    CMP AX,0
    JZ GET_M522
    MOV SI,OFFSET BER_HIS_KM1
    CALL KEY_FUN_I
    JC GET_M1
    JMP GET_M523
  GET_M522:
    CALL GET_MOUSE_STATE
    TEST CH,1
    JZ GET_M1
    TEST BL,3
    JZ GET_M1
    MOV SI,OFFSET BER_HIS_M1
    CALL MOUSE_FUN_I
    JC GET_M1
  GET_M523:
    TEST AL,10H
    JZ TY924
  TY922:
    CALL CLS
    RET
  TY924:
    MOV AH,AL
    CALL POSTRUN_LINK
    JMP TY922
BERH_S1 ENDP

SC_S1 PROC NEAR
    CALL DISPLAY_CON
    MOV SI,OFFSET SIG_CON3
    CALL DOUBLE_DIS_LINE
    CALL GET_MOUSE_STATE
  GET_M2:
    CALL CLEAR_BUFFER_GET_KEY2
    CMP AX,0
    JZ GET_M518
    MOV SI,OFFSET SIG_CON_KM1
    CALL KEY_FUN_I
    JC GET_M2
    JMP GET_M519
  GET_M518:
    CALL GET_MOUSE_STATE
    TEST CH,1
    JZ GET_M2
    TEST BL,3
    JZ GET_M2
    MOV SI,OFFSET SIG_CON_M1
    CALL MOUSE_FUN_I
    JC GET_M2
  GET_M519:
    TEST AL,10H
    JZ TY921
  TY923:
    CALL CLS
    RET
  TY921:
    MOV AH,AL
    CALL POSTRUN_LINK
    JMP TY923
SC_S1 ENDP

FD_S1 PROC NEAR
    CALL DISPLAY_CON

    CMP CF_CON,0
    JZ TY671
    CMP CF_CON,1
    JNZ TY672
  TY671:
    MOV SI,OFFSET SIG_CON1+2
    MOV BYTE PTR [SI],0FH
    MOV SI,OFFSET SIG_CON2+2
    MOV BYTE PTR [SI],0FH
    MOV SI,OFFSET TX1+2
    MOV BYTE PTR [SI],7
    MOV SI,OFFSET TX2+2
    MOV BYTE PTR [SI],7
    JMP TY673
  TY672:
    MOV SI,OFFSET SIG_CON1+2
    MOV BYTE PTR [SI],70H
    MOV SI,OFFSET SIG_CON2+2
    MOV BYTE PTR [SI],70H
    MOV SI,OFFSET TX1+2
    MOV BYTE PTR [SI],0FH
    MOV SI,OFFSET TX2+2
    MOV BYTE PTR [SI],0FH
  TY673:

    CMP RF_CON,0
    JZ TY674
    CMP RF_CON,1
    JNZ TY675
  TY674:
    MOV SI,OFFSET SIG_CON5+2
    MOV BYTE PTR [SI],0FH
    MOV SI,OFFSET SIG_CON4+2
    MOV BYTE PTR [SI],0FH
    MOV SI,OFFSET RX1+2
    MOV BYTE PTR [SI],7
    MOV SI,OFFSET RX2+2
    MOV BYTE PTR [SI],7
    JMP TY676
```

```
TY675:
  MOV SI,OFFSET SIG_CON5+2
  MOV BYTE PTR [SI],70H
  MOV SI,OFFSET SIG_CON4+2
  MOV BYTE PTR [SI],70H
  MOV SI,OFFSET RX1+2
  MOV BYTE PTR [SI],0FH
  MOV SI,OFFSET RX2+2
  MOV BYTE PTR [SI],0FH
TY676:

  MOV SI,OFFSET SIG_CON1
  CALL DOUBLE_DIS_LINE
  CALL GET_MOUSE_STATE
GET_M3:
  CALL CLEAR_BUFFER_GET_KEY2
  CMP AX,0
  JZ GET_M520
  MOV SI,OFFSET SIG_CON_KM2
  CALL KEY_FUN_I
  JC GET_M3
  JMP GET_M521
GET_M520:
  CALL GET_MOUSE_STATE
  TEST CH,1
  JZ GET_M3
  TEST BL,3
  JZ GET_M3
  MOV SI,OFFSET SIG_CON_M2
  CALL MOUSE_FUN_I
  JC GET_M3
GET_M521:
  TEST AL,10H
  JZ TY971
TY973:
  CALL CLS
  RET
TY971:
  MOV AH,AL

  CMP AH,2
  JZ TY677
  CMP AH,3
  JNZ TY678
TY677:
  CMP CF_CON,0
  JZ GET_M3
  CMP CF_CON,1
  JZ GET_M3
  JMP TY679
TY678:
  CMP RF_CON,0
  JZ GET_M3
  CMP RF_CON,1
  JZ GET_M3
  TY679:
    CALL POSTRUN_LINK
    JMP TY973
FD_S1 ENDP

DOS_HANDLER PROC NEAR
    MOV STACK_POINTER1,SP
    MOV AX,CODE
    MOV DS,AX
    MOV SI,OFFSET ERROR_RETURN
    CALL SET_RETURN_ADDRESS
    CALL SET_CRITICAL_ADDRESS
    CALL GET_PSP_SEGMENT
    MOV ES,AX
    MOV SI,2CH
    MOV AX,ES:[SI]
    MOV BX,CONST
    MOV DS,BX
    MOV ES,BX
    MOV SI,OFFSET LSD1
    MOV DS:[SI+6],AX
    MOV SI,OFFSET LSD
    CALL LOAD_PROGRAM
  R11:
    RET
DOS_HANDLER ENDP

ERROR_RETURN PROC NEAR
    MOV AX,CONST
    MOV DS,AX
    MOV ES,AX
    MOV SP,STACK_POINTER1
    JMP R11
ERROR_RETURN ENDP

UP_SET PROC NEAR
    MOV SI,OFFSET S_INTEGE
    CALL DOUBLE_DIS_LINE
  UP1:
    MOV SI,OFFSET ENTER_UP
    CALL DOUBLE_DIS_LINE
    MOV DI,OFFSET MA_UP
    MOV SI,OFFSET INTEGERN
    CALL LFDP_ASC
    CALL FDP_NUMBER_EDITOR
    MOV BX,OFFSET UP_ERROR
    MOV DX,21
    CALL ERROR_DETECT1
    JC UP1
    CALL ULFDP_ASC
    RET
UP_SET ENDP

NOC_SET PROC NEAR
    MOV SI,OFFSET S_INTEGE
```

```
        CALL DOUBLE_DIS_LINE
      NC1:
        MOV SI,OFFSET ENTER_NC
        CALL DOUBLE_DIS_LINE
        MOV DI,OFFSET MA_NC
        MOV SI,OFFSET INTEGERN
        CALL LFDP_ASC
        CALL FDP_NUMBER_EDITOR
        MOV BX,OFFSET NC_ERROR
        MOV DX,11
        CALL ERROR_DETECT1
        JC NC1
        CALL ULFDP_ASC
        RET
    NOC_SET ENDP

    MA_PRO_SET PROC NEAR
        AND AH,0FH
        MOV MA_CON,AH
        CALL DISPLAY_MA_PT
        RET
    MA_PRO_SET ENDP

    AMBD_S1 PROC NEAR
        PUSH AX
        MOV SI,OFFSET S_INTEGE
        CALL DOUBLE_DIS_LINE
        POP AX

        MOV DI,OFFSET MA_AMBF
        MOV SI,OFFSET ENTER_AMBF
        AND AH,0FH
        CMP AH,1
        JZ ASPN1
        CMP AH,3
        JZ ASPN2
        ADD DI,20
        MOV SI,OFFSET ENTER_PR
        JMP ASPN1
      ASPN2:
        ADD DI,10
      ASPN1:
        CALL DOUBLE_DIS_LINE
        MOV SI,OFFSET INTEGERN1
        CALL LFDP_ASC
        CALL FDP_NUMBER_EDITOR
        CALL ULFDP_ASC
        RET
    AMBD_S1 ENDP

    LC_SET PROC NEAR
        PUSH AX
        MOV SI,OFFSET S_NN
        CALL COMPUTE_NUMBER
        MOV BX,AX
```

```
  POP AX
  PUSH BX
  PUSH AX
  MOV SI,OFFSET SBU
  CALL SAVE_SCREEN
  CALL CLS
  MOV SI,OFFSET A_P_NUMB
  CALL DOUBLE_DIS_LINE
  MOV SI,OFFSET LINK_C_UNIT
  CALL DOUBLE_DIS_LINE
  POP AX
  AND AH,0FH
  CMP AH,1
  JNZ LC279
  MOV AX,OFFSET LC1
  JMP AX
LC279:
  CMP AH,2
  JNZ LC278
  MOV AX,OFFSET LC2
  JMP AX
LC278:
  POP AX
  CMP AL,2
  JNZ LC893
  DEC AL
LC893:
  PUSH AX
  MOV SI,OFFSET A_FLP_BOUND2
  MOV DI,OFFSET A_FLP_BOUND3
  MOV BYTE PTR [DI+4],AL
  CALL FILL_RETURN
  MOV WORD PTR [DI+BX+10],0D31H
  POP AX
  PUSH AX
  CMP AL,1
  JNZ LC894
  MOV BYTE PTR [SI+BX+10],32H
  MOV BYTE PTR [DI+BX+10],32H
LC894:
  PUSH SI
  PUSH DI
  PUSH BX
  CALL DOUBLE_DIS_LINE
  MOV SI,OFFSET A_FLP_BOUND3
  CALL DOUBLE_DIS_LINE
  POP BX
  POP DI
  POP SI
  POP AX
  PUSH AX
  MOV BYTE PTR [SI+BX+11]," "
  MOV BYTE PTR [DI+BX+11]," "
  ADD AL,31H
  MOV [SI+BX+10],AL
  MOV [DI+BX+10],AL
  POP AX
  MOV BX,AX
  ADD AX,BX
  PUSH AX
  MOV DI,OFFSET LC_BL
  MOV SI,OFFSET A_FLP_NUMBER4
  JMP LC3
LC2:
  POP AX
  PUSH AX
  MOV SI,OFFSET A_FLP_BOUND
  CALL FILL_RETURN
  PUSH SI
  PUSH BX
  CALL DOUBLE_DIS_LINE
  POP BX
  POP SI
  POP AX
  PUSH AX
  MOV BYTE PTR [SI+BX+11]," "
  ADD AL,31H
  MOV [SI+BX+10],AL
  MOV DI,OFFSET LC_UL
  MOV SI,OFFSET A_FLP_NUMBER3
  JMP LC3
LC1:
  POP AX
  DEC AL
  PUSH AX
  MOV SI,OFFSET A_FLP_BOUND4
  MOV DI,OFFSET A_FLP_BOUND5
  MOV BYTE PTR [DI+4],AL
  CALL FILL_RETURN
  MOV BYTE PTR [DI+BX+11],0DH
  PUSH DI
  PUSH SI
  PUSH BX
  CALL DOUBLE_DIS_LINE
  MOV SI,OFFSET A_FLP_BOUND5
  CALL DOUBLE_DIS_LINE
  POP BX
  POP SI
  POP DI
  MOV BYTE PTR [SI+BX+11]," "
  MOV BYTE PTR [DI+BX+11]," "
  MOV DI,OFFSET LC_S
  MOV SI,OFFSET A_FLP_NUMBER4
  POP AX
  SHL AX,1
  PUSH AX
LC3:
  CALL LAF_ASC
  POP AX
  MOV [SI],AX
```

```
    CALL A_FLP_EDITOR
    CALL ULAF_ASC
    MOV SI,OFFSET SBU
    CALL RECOVER_SCREEN
    RET


  FILL_RETURN:
    MOV BYTE PTR [SI+4],AL
    MOV DL,7
    MUL DL
    XOR BH,BH
    MOV BL,AL
    MOV WORD PTR [SI+BX+10],0D31H
    RET
LC_SET ENDP

ITM_SET PROC NEAR
    MOV SI,OFFSET S_NN
    CALL COMPUTE_NUMBER
    MOV SI,OFFSET A_FLP_S3
    MOV DS:[SI+SQ_INDEX_NR],AL
    MOV DS:[SI+SQ_INDEX_NEPWR],AL
    MOV DS:[SI+SQ_INDEX_NEPR],AL
    PUSH AX
    MOV DL,9
    MUL DL
    ADD AX,5
    MOV DS:[SI+SQ_INDEX_NC],AL
    POP AX
    PUSH AX
    MOV DL,AL
    MUL DL
    MOV DS:[SI+SQ_INDEX_TNE],AL
    MOV SI,OFFSET SBU
    CALL SAVE_SCREEN
    CALL CLS
    MOV SI,OFFSET A_P_NUMB
    CALL DOUBLE_DIS_LINE
    MOV SI,OFFSET ITM_UNIT
    CALL DOUBLE_DIS_LINE
    MOV SI,OFFSET A_FLP_S3
    CALL SQUARE_INDEX
    MOV SI,OFFSET LEFT_F
    POP AX
    PUSH AX
    MOV DL,6
    MUL DL
    XOR BH,BH
    MOV BL,AL
    MOV BYTE PTR [SI+BX+2],0DH
    PUSH BX
    PUSH SI
    CALL DOUBLE_DIS_LINE
    POP SI
    POP BX
    MOV BYTE PTR [SI+BX+2]," "
    MOV DI,OFFSET ITM_S
    MOV SI,OFFSET A_FLP_NUMBER2
    POP AX
    CALL SET_DISABLE
    CALL LAF_ASC
    CALL A_FLP_EDITOR
    CALL ULAF_ASC
    MOV SI,OFFSET SBU
    CALL RECOVER_SCREEN
    RET
ITM_SET ENDP

FLP_CONTROL   EQU 15
AF_BUFFER_BEGIN EQU 36

SET_DISABLE PROC NEAR
    PUSH DI
    PUSH SI
    MOV CX,64
    MOV [SI],CX
    ADD SI,AF_BUFFER_BEGIN
    XOR BX,BX
  SD1:
    MOV DI,[SI]
    AND BYTE PTR [DI+FLP_CONTROL],0BFH
    CMP BH,AL
    JAE SD7
    CMP BL,AL
    JC SD2
  SD7:
    XOR BYTE PTR [DI+FLP_CONTROL],40H
  SD2:
    INC SI
    INC SI
    CMP BH,AL
    JAE SD4
    CMP BL,7
    JC SD3
    INC BH
    XOR BL,BL
    JMP SD4
  SD3:
    INC BL
  SD4:
  LOOP SD1
    POP SI
    POP DI
    RET
SET_DISABLE ENDP

ITM_SET1 PROC NEAR
    MOV SI,OFFSET MA_UP
    CALL COMPUTE_NUMBER
    MOV SI,OFFSET A_FLP_S2
    MOV DS:[SI+SQ_INDEX_TNE],AL
    PUSH AX
    CMP AL,9
    JC IT1
    MOV AL,8
  IT1:
    MOV DS:[SI+SQ_INDEX_NEPWR],AL
    MOV DS:[SI+SQ_INDEX_NEPR],AL
    MOV DL,9
    MUL DL
    ADD AX,5
    MOV DS:[SI+SQ_INDEX_NC],AL
    POP AX
    PUSH AX
    MOV DL,8
    DIV DL
    CMP AH,0
    JZ ITM9
    INC AL
  ITM9:
    MOV DS:[SI+SQ_INDEX_NR],AL
    MOV SI,OFFSET SBU
    CALL SAVE_SCREEN
    CALL CLS
    MOV SI,OFFSET A_P_NUMB
    CALL DOUBLE_DIS_LINE
    MOV SI,OFFSET ITM_UNIT1
    CALL DOUBLE_DIS_LINE
    MOV SI,OFFSET A_FLP_S2
    CALL SQUARE_INDEX
    MOV DI,OFFSET ITM_MA
    MOV SI,OFFSET A_FLP_NUMBER2
    POP AX
    PUSH AX
    MOV DS:[SI],AX
    CALL SET_ABLE
    CALL LAF_ASC
    POP AX
    MOV DS:[SI],AX
    CALL A_FLP_EDITOR
    CALL ULAF_ASC
    MOV SI,OFFSET SBU
    CALL RECOVER_SCREEN
    RET
ITM_SET1 ENDP

SET_ABLE PROC NEAR
    PUSH SI
    PUSH DI
    MOV CX,DS:[SI]
    ADD SI,AF_BUFFER_BEGIN
  SA1:
    MOV DI,[SI]
    AND BYTE PTR [DI+FLP_CONTROL],0BFH
    INC SI
    INC SI
  LOOP SA1
    POP DI
    POP SI
    RET
SET_ABLE ENDP

REAL_TIME_SET PROC NEAR
    AND AH,0FH
    MOV REAL_TIME,AH
    CALL DISPLAY_REAL_TIME
    RET
REAL_TIME_SET ENDP

DISPLAY_REAL_TIME PROC NEAR
    MOV SI,OFFSET REAL_TIME_M
    CALL DOUBLE_DIS_LINE
    MOV SI,OFFSET REAL_TIME_OFF
    CMP REAL_TIME,0
    JZ REL1
    MOV SI,OFFSET REAL_TIME_ON
  REL1:
    CALL DOUBLE_DIS_LINE
    RET
DISPLAY_REAL_TIME ENDP

TOPOLOGY_SET PROC NEAR
    AND AH,0FH
    MOV SAF_TP,AH
    CALL DISPLAY_SAF_TP
    MOV SAF_RTG,1
    CALL DISPLAY_SAF_RG
    RET
TOPOLOGY_SET ENDP

NON_SET PROC NEAR
    MOV SI,OFFSET S_INTEGE
    CALL DOUBLE_DIS_LINE
  NNE10:
    MOV SI,OFFSET ENTER_NN
    CALL DOUBLE_DIS_LINE
    MOV DI,OFFSET S_NN
    MOV SI,OFFSET INTEGERN
    CALL LFDP_ASC
    CALL FDP_NUMBER_EDITOR
    MOV BX,OFFSET NN_ERROR
    MOV DL,9
    MOV DH,1
    CALL ERROR_DETECT1
    JC NNE10
    CALL ULFDP_ASC
    RET

  ERROR_DETECT1:
    PUSH SI
    MOV CL,DS:[SI+L_COUNT_BYTE]
    CMP CL,1
    JNZ NNE1
    MOV AX,BX
    CALL ORDER_ERROR
    JMP NNE2
  NNE1:
    PUSH DX
    DEC CL
    XOR CH,CH
    XOR AX,AX
    MOV DL,10
    ADD SI,L_SECOND_DATA
  NN3:
    MUL DL
    PUSH CX
    MOV CL,DS:[SI]
    SUB CL,30H
    XOR CH,CH
    ADD AX,CX
    INC SI
    POP CX
  LOOP NN3
    POP DX
    CMP DH,AL
    JAE NNE98
    CMP AL,DL
    JC NNE4
  NNE98:
    MOV AX,BX
    CALL ORDER_ERROR
    JMP NNE2
  NNE4:
    CLC
  NNE5:
    POP SI
    RET
  NNE2:
    STC
    JMP NNE5
NON_SET ENDP

SAF_OD_S1 PROC NEAR
    MOV STACK_POINTER3,SP
    CALL CLEAR_FDP_MARK
    MOV DI,OFFSET PB_NM
    MOV SI,OFFSET A_FDP_NUMBER
    CALL LAD_ASC
  SAF9:
    CALL DISPLAY_SAF_OU
    TEST NET_OD_SAF,3
    JZ GET_M67
    MOV SI,OFFSET A_FDP_NUMBER
    CALL A_FDP_EDITOR
  SAF7:
    CALL CLEAR_FDP_MARK
    MOV DI,OFFSET PB_NM
    MOV SI,OFFSET A_FDP_NUMBER
    CALL ULAD_ASC
    CALL CLS
    RET
  GET_M67:
    CALL GET_MOUSE_STATE
  GET_M65:
    CALL CLEAR_BUFFER_GET_KEY2
    CMP AX,0
    JZ GET_M70
    MOV BL,1
    MOV SI,OFFSET MA_OD_CTL_K
    CALL KEY_FUN_I
    JC GET_M65
    JMP GET_M69
  GET_M70:
    CALL GET_MOUSE_STATE
    TEST CH,1
    JZ GET_M65
    TEST BL,3
    JZ GET_M65
    MOV SI,OFFSET SAF_OD_CTL
    CALL MOUSE_FUN_I
    JC GET_M65
  GET_M69:
    CMP AL,0
    JZ SAF7
    MOV NET_OD_SAF,AL
    JMP SAF9
    RET
SAF_OD_S1 ENDP

MOUSE_HANDLER8 PROC NEAR
    MOV BL,1
    MOV SI,OFFSET SAF_OD_CTL
    CALL MOUSE_FUN_I
    JC GET_M68
  GET_M9742:
    MOV SP,STACK_POINTER3
    PUSH AX
    MOV DI,OFFSET A_FDP_NUMBER
    MOV SI,[DI+2]
    CALL ERASE_AD_LAST
    POP AX
    CMP AL,0
    JZ SAF7
    CMP NET_OD_SAF,AL
    JNZ GET_M99
    XOR NET_OD_SAF,AL
    JMP SAF9
  GET_M99:
    MOV NET_OD_SAF,AL
    JMP SAF9
  GET_M68:
    RET
MOUSE_HANDLER8 ENDP

FUNCTION_KEY_HANDLER8 PROC NEAR
    MOV BL,1
    MOV SI,OFFSET MA_OD_CTL_K
    CALL KEY_FUN_I
    JC GET_M68
    JMP GET_M9742
    RET
FUNCTION_KEY_HANDLER8 ENDP

CLEAR_FDP_MARK PROC NEAR
    MOV SI,OFFSET A_FDP_NUMBER
    MOV CX,[SI]
    ADD SI,34
  SAF89:
    MOV DI,[SI]
    AND BYTE PTR [DI+1],0FDH
    INC SI
    INC SI
  LOOP SAF89
    RET
CLEAR_FDP_MARK ENDP

DISPLAY_SAF_OU PROC NEAR
    MOV SI,OFFSET SAF_OD_MESS1
    CALL DOUBLE_DIS_LINE
    TEST NET_OD_SAF,1
    JNZ SAF1
       MOV SI,OFFSET SAF_OD_MESS3
       CALL DOUBLE_DIS_LINE
       MOV SI,OFFSET SAF_OD_PD_OFF
       CALL DOUBLE_DIS_LINE
  SAF1:
    TEST NET_OD_SAF,2
    JNZ SAF2
       MOV SI,OFFSET SAF_OD_MESS5
       CALL DOUBLE_DIS_LINE
       MOV SI,OFFSET SAF_OD_PB_OFF
       CALL DOUBLE_DIS_LINE
  SAF2:
    CALL CLEAR_FDP_MARK
    MOV SI,OFFSET A_FDP_NUMBER
    ADD SI,34
    TEST NET_OD_SAF,1
    JNZ SAF96
       MOV DI,[SI]
       XOR BYTE PTR [DI+1],2
       INC SI
       INC SI
       MOV DI,[SI]
       XOR BYTE PTR [DI+1],2
       INC SI
       INC SI
       JMP SAF961
  SAF96:
     ADD SI,4
  SAF961:
    TEST NET_OD_SAF,2
    JNZ SAF97
       MOV DI,[SI]
       XOR BYTE PTR [DI+1],2
       INC SI
       INC SI
       MOV DI,[SI]
       XOR BYTE PTR [DI+1],2
  SAF97:
    RET
DISPLAY_SAF_OU ENDP

MA_OD_S1 PROC NEAR
    MOV STACK_POINTER3,SP
  SAF924:
    CALL DISPLAY_MA_OU
    CALL MA_MOUSE_A
    JZ SAF923
    CMP NET_OD_MA,AL
    JNZ SAF883
    XOR NET_OD_MA,AL
    JMP SAF924
  SAF883:
    MOV NET_OD_MA,AL
    JMP SAF924
  SAF923:
    CALL CLS
    RET
MA_OD_S1 ENDP

DISPLAY_MA_OU PROC NEAR
    PUSH SI
    MOV SI,OFFSET MA_OD_MESS1
    CALL DOUBLE_DIS_LINE
    TEST NET_OD_MA,1
    JNZ SAF3
       MOV SI,OFFSET MA_OD_MESS3
       CALL DOUBLE_DIS_LINE
  SAF3:
    TEST NET_OD_MA,2
    JNZ SAF91
       MOV SI,OFFSET MA_OD_MESS5
       CALL DOUBLE_DIS_LINE
  SAF91:
    POP SI
    RET
DISPLAY_MA_OU ENDP

MA_MOUSE_A PROC NEAR
```

```
  GET_M66:
    CALL CLEAR_BUFFER_GET_KEY2
    CMP AX,0
    JZ GET_M665
    MOV SI,OFFSET MA_OD_CTL_K
    CALL KEY_FUN_I
    JC GET_M66
    CMP AL,0
    RET
  GET_M665:
    CALL GET_MOUSE_STATE
    TEST CH,1
    JZ GET_M66
    TEST BL,3
    JZ GET_M66
    MOV SI,OFFSET MA_OD_CTL
    CALL MOUSE_FUN_I
    JC GET_M66
    CMP AL,0
    RET
MA_MOUSE_A ENDP

DISPLAY_NETCON PROC NEAR
    CALL RECOVER_NETCON
    MOV SI,OFFSET NETCON_M
    CALL DOUBLE_DIS_LINE
    CMP NET_CON,0
    JZ DNC4
    CMP NET_CON,1
    JZ DNC2
    MOV SI,OFFSET NETCON_MA
    JMP DNC3
  DNC4:
    MOV SI,OFFSET NETCON_UD
    JMP DNC3
  DNC2:
    MOV SI,OFFSET NETCON_SAF
  DNC3:
    CALL DOUBLE_DIS_LINE

    CALL DISPLAY_MA_PT
    CALL DISPLAY_SAF_TP
    CALL DISPLAY_SAF_RG
    CALL DISPLAY_REAL_TIME
    RET
DISPLAY_NETCON ENDP

RECOVER_NETCON PROC NEAR
    MOV SI,OFFSET NETCON_C
    CALL DOUBLE_DIS_LINE
    RET
RECOVER_NETCON ENDP

DISPLAY_MA_PT PROC NEAR
    CMP NET_CON,2
    JZ DMP1
    RET
  DMP1:
    MOV SI,OFFSET NETCON_MA_M
    CALL DOUBLE_DIS_LINE
    CMP MA_CON,0
    JZ DMP5
    CMP MA_CON,3
    JZ DMP6
    CMP MA_CON,2
    JZ DMP3
    MOV SI,OFFSET NETCON_MA_A
    JMP DMP4
  DMP5:
    MOV SI,OFFSET NETCON_MA_UD
    JMP DMP4
  DMP3:
    MOV SI,OFFSET NETCON_MA_TCR
  DMP4:
    CALL DOUBLE_DIS_LINE
    RET
  DMP6:
    MOV SI,OFFSET NETCON_MA_CSMA
    JMP DMP4
DISPLAY_MA_PT ENDP

DISPLAY_SAF_TP PROC NEAR
    CMP NET_CON,1
    JZ DMP11
    RET
  DMP11:
    MOV SI,OFFSET NETCON_TP_M
    CALL DOUBLE_DIS_LINE
    CMP SAF_TP,0
    JZ DMP10
    CMP SAF_TP,2
    JZ DMP7
    CMP SAF_TP,3
    JZ DMP9
    MOV SI,OFFSET NETCON_TP_S
    JMP DMP8
  DMP9:
    MOV SI,OFFSET NETCON_TP_BL
    JMP DMP8
  DMP10:
    MOV SI,OFFSET NETCON_TP_UD
    JMP DMP8
  DMP7:
    MOV SI,OFFSET NETCON_TP_UL
  DMP8:
    CALL DOUBLE_DIS_LINE
    RET
DISPLAY_SAF_TP ENDP

DISPLAY_SAF_RG PROC NEAR
```

```
    CMP NET_CON,1
    JZ DMR1
    RET
  DMR1:
    MOV SI,OFFSET NETCON_RG_M
    CALL DOUBLE_DIS_LINE
    CMP SAF_RTG,0
    JZ DMR5
    CMP SAF_RTG,2
    JZ DMR3
    MOV SI,OFFSET NETCON_RG_S
    JMP DMR4
  DMR5:
    MOV SI,OFFSET NETCON_RG_UD
    JMP DMR4
  DMR3:
    MOV SI,OFFSET NETCON_RG_R
  DMR4:
    CALL DOUBLE_DIS_LINE
    RET
DISPLAY_SAF_RG ENDP

SET_NET_CON PROC NEAR
    MOV SI,OFFSET NET_OD_S1+LIST_OVERHEAD
    AND BYTE PTR [SI+STATUS],0EH
    XOR BYTE PTR [SI+STATUS],1
    ADD SI,ELEMENT_SIZE
    AND BYTE PTR [SI+STATUS],0EH
    XOR BYTE PTR [SI+STATUS],1
    TEST AH,10H
    JZ DNC45
    MOV NET_CON,1
    MOV SI,OFFSET NET_OD_S1+LIST_OVERHEAD+ELEMENT_SIZE
    JMP DNC5
   DNC45:
    MOV NET_CON,2
    MOV SI,OFFSET NET_OD_S1+LIST_OVERHEAD
  DNC5:
    AND BYTE PTR [SI+STATUS],0EH
    CALL DISPLAY_NETCON
    RET
SET_NET_CON ENDP

LIST_OVERHEAD EQU 5
ELEMENT_SIZE  EQU 12
STATUS        EQU 0

DISABLE_ED PROC NEAR
    MOV SI,OFFSET ENCODER_S1+LIST_OVERHEAD
    CALL RESET_ED
    MOV SI,OFFSET DECODER_S1+LIST_OVERHEAD
    CALL RESET_ED
    CMP ECD_CON,0
    JNZ DED4
    CMP DCD_CON,0
    JNZ DED5
    RET
  DED4:
    CMP ECD_CON,1
    JZ DED1
    CMP ECD_CON,2
    JZ DED2
    CMP ECD_CON,3
    JZ DED2
    CMP ECD_CON,5
    JZ DED3
    RET
  DED1:
    MOV SI,OFFSET DECODER_S1+LIST_OVERHEAD
  DED10:
    AND BYTE PTR [SI+STATUS],0EH
    ADD SI,ELEMENT_SIZE
    AND BYTE PTR [SI+STATUS],0EH
    RET
  DED2:
    MOV SI,OFFSET DECODER_S1+LIST_OVERHEAD+ELEMENT_SIZE
    JMP DED10
  DED3:
    MOV SI,OFFSET DECODER_S1+LIST_OVERHEAD
  DED11:
    AND BYTE PTR [SI+STATUS],0EH
    ADD SI,ELEMFNT_SIZE
    ADD SI,ELEMENT_SIZE
    AND BYTE PTR [SI+STATUS],0EH
    RET
  DED5:
    CMP DCD_CON,1
    JZ DED6
    CMP DCD_CON,2
    JZ DED7
    CMP DCD_CON,3
    JZ DED7
    CMP DCD_CON,4
    JZ DED8
    RET
  DED6:
    MOV SI,OFFSET ENCODER_S1+LIST_OVERHEAD
    JMP DED10
  DED7:
    MOV SI,OFFSET ENCODER_S1+LIST_OVERHEAD+ELEMENT_SIZE
    JMP DED10
  DED8:
    MOV SI,OFFSET ENCODER_S1+LIST_OVERHEAD
    JMP DED11
DISABLE_ED ENDP

RESET_ED PROC NEAR
    AND BYTE PTR [SI+STATUS],0EH
    XOR BYTE PTR [SI+STATUS],1
    ADD SI,ELEMENT_SIZE
```

```
        AND BYTE PTR [SI+STATUS],0EH
        XOR BYTE PTR [SI+STATUS],1
        ADD SI,ELEMENT_SIZE
        AND BYTE PTR [SI+STATUS],0EH
        XOR BYTE PTR [SI+STATUS],1
        RET
    RESET_ED ENDP

CODE ENDS
END
```

```
; *************************** LN1.ASM *******************************

; ALOHA.TDT:
; TREE.TDT
; CSMA.TDT
;
;    User population
;    Number of channels
;    Input traffic matrix: User 1
;                        : User 2
;                            .
;                            .
;                            .
;                        : User 12
;    Maximum simulation time
;    Delay-throughput switch
;    Real time on-off switch

; STARNET.TDT:
;    Number of nodes
;    Traffic matrix: 64 numbers
;                    (0,1)
;                    (0,2)
;                      .
;                      .
;                      .
;                    (0,7)
;                    (1,0)
;                      .
;                      .
;                      .
;                    (1,7)
;                      .
;                      .
;                      .
;                    (7,7)
;    Link capacities: 7 numbers
;                    (1,0)
;                    (2,0)
;                    (3,0)
;                      .
;                      .
;                      .
;                    (7,0)

; UNILOOP.TDT:
;    Number of nodes
;    Traffic matrix: 64 numbers
;                    (0,1)
;                    (0,2)
;                      .
;                      .
;                      .
;                    (0,7)
;                    (1,0)
;                      .
;                      .
;                      .
;                    (1,7)
;                      .
;                      .
;                      .
;                    (7,7)

; BIDLOOP.TDT:
;    Number of nodes
;    Traffic matrix: 64 numbers
;                    (0,1)
;                    (0,2)
;                      .
;                      .
;                      .
;                    (0,7)
;                    (1,0)
;                      .
;                      .
;                      .
;                    (1,7)
;                      .
;                      .
;                      .
;                    (7,7)

; SOURCE.TDT: One of the following four cases:
;    Random bit case:
;       Bit rate
;    Sinusoidal case:
;       Sampling Frequency
;       Sinusoidal Frequency
;    Square wave case:
;       Amplitude
;       Frequency
;    White Gaussian case:
;       NO

; CHLFLTR1.TDT: One of the following four cases:
;    Butterworth case:
;       Filter type : 1 : by order
;                     2 : by attenuation
;       Order
;       Sampling frequency
;       Cutoff frequency
;    Chebychev case:
;       Same as Butterworth case
;    Elliptic case:
;       Same as Butterworth case
;    FIR case:
;       Filter type : 1 : by coefficients
;                     2 : by attenuation
;       Order
;       Sampling frequency
;       Cutoff frequency
;       Coefficient #0
;       Coefficient #1
;             .
;             .
;             .
;       Coefficient #98

; CHLFLTR2.TDT: One of the following four cases:
;    Butterworth case:
;       Attenuation sampling frequency
;       Passband edge frequency
;       Stopband edge frequency
;       Passband attenuation
;       Stopband attenuation
;    Chebychev case:
;       Same as Butterworth case
;    Elliptic case:
;       Same as Butterworth case
;    FIR case:
;       Same as Butterworth case

; RCVRFLTR1.TDT: Same as CHLFLTR1.TDT
; RCVRFLTR2.TDT: Same as CHLFLTR2.TDT

; CHANNEL.TDT: One of the following three cases:
;    White Gaussian noise:
;       Signal-to-noise ratio
;    BSC case:
;       bit error rate
;    Propagation Model:
;       Type : 0 : Open Area + No Foliage
;              1 : Suburban Area + No Foliage
;              2 : Open Area + Foliaged
;              3 : Suburban Area + Foliaged
;       Transmitter Antenna Height
;       Receiver Antenna Height
;       Transmitter Average Power
;       Transmitter Antenna Gain
;       Receiver Antenna Gain
;       Carrier Frequency
;       Distance between Transmitter and Receiver
;       Receiver Noise Power
;       Receiver Bandwidth

STACK SEGMENT 'STACK' STACK
STACK ENDS

EXTRN BIT_RATE:BYTE,AMPLITUDE_SIN:BYTE,AMPLITUDE_SW:BYTE
EXTRN SOU_NO:BYTE,SF_BW_CF:BYTE,CHL_NO:BYTE,CHL_ER:BYTE
EXTRN SBU:BYTE,MA_UP:BYTE,NET_CON:BYTE,SAF_TP:BYTE
EXTRN SOU_CON:BYTE,MOD_CON:BYTE,ECD_CON:BYTE,CF_CON:BYTE
EXTRN RF_CON:BYTE,DCD_CON:BYTE,DEMOD_CON:BYTE,CHL_CON:BYTE
EXTRN ITM_MA:BYTE,ITM_S:BYTE,S_NN:BYTE,LC_BL:BYTE,LC_UL:BYTE
EXTRN LC_S:BYTE,ORDER_BW_CF:BYTE,FIR_CF:BYTE,PM_CON:BYTE,PM_CONST:BYTE
EXTRN CF_BW_T:BYTE,NET_OD_SAF:BYTE,PB_SN:BYTE
EXTRN NET_OD_MA:BYTE,MA_CON:BYTE,SAF_RTG:BYTE,REAL_TIME:BYTE
EXTRN NUMBER_ITERATION:BYTE,MA_AMBF:BYTE,MA_CMBF:BYTE

CONST SEGMENT 'DATA' PARA PUBLIC
  O_LINK_NET DB 8 DUP (?)
  LOAD_STATUS DB 0
  DATA_FILE_NAME1 DB "PBRESULT.DAT",0
  DATA_FILE_NAME2 DB "TXFILT.DAT",0
  DATA_FILE_NAME3 DB "RCFILT.DAT",0
  SOU_CON_TDT DB "SOU_CON.TDT",0
  STOP_TDT DB "STOP.TDT",0
  STOP_TDT1 DB 1
            DB 0
            DW OFFSET NUMBER_ITERATION
            DW 1
            DW 13
  SOU_TDT DB "SOURCE.TDT",0
  SOU_TDT1 DB 4
           DB 1
           DW OFFSET BIT_RATE
           DW 1
           DW 15
           DB 2
           DW OFFSET AMPLITUDE_SIN
           DW 2
           DW 15
           DB 3
           DW OFFSET AMPLITUDE_SW
           DW 2
           DW 15
           DB 4
           DW OFFSET SOU_NO
           DW 1
           DW 15
  CF_TDTA DB "CHLFLTR1.TDT",0
  CF_TDTB DB "CHLFLTR2.TDT",0
  CF_TDT1 DB 4
          DB 3
          DW OFFSET SF_BW_CF
          DW 2
          DW 15
          DB 4
          DW OFFSET SF_BW_CF+105
          DW 2
          DW 15
          DB 5
          DW OFFSET SF_BW_CF+210
          DW 2
          DW 15
          DB 6
          DW OFFSET SF_BW_CF+315
          DW 2
          DW 15
```

```
CF_TDT2 DB 4
        DB 3
        DW OFFSET ORDER_BW_CF
        DW 1
        DW 5
        DB 4
        DW OFFSET ORDER_BW_CF+5
        DW 1
        DW 5
        DB 5
        DW OFFSET ORDER_BW_CF+10
        DW 1
        DW 5
        DB 6
        DW OFFSET ORDER_BW_CF+20
        DW 1
        DW 5
CF_TDT3 DB 1
        DB 6
        DW OFFSET FIR_CF+3
        DW 98
        DW 14
CF_TDT4 DB 4
        DB 3
        DW OFFSET SF_BW_CF+30
        DW 5
        DW 15
        DB 4
        DW OFFSET SF_BW_CF+135
        DW 5
        DW 15
        DB 5
        DW OFFSET SF_BW_CF+240
        DW 5
        DW 15
        DB 6
        DW OFFSET SF_BW_CF+345
        DW 5
        DW 15
RF_TDTA DB "RCVFLTR1.TDT",0
RF_TDTB DB "RCVFLTR2.TDT",0
RF_TDT1 DB 4
        DB 3
        DW OFFSET SF_BW_CF+420
        DW 2
        DW 15
        DB 4
        DW OFFSET SF_BW_CF+525
        DW 2
        DW 15
        DB 5
        DW OFFSET SF_BW_CF+630
        DW 2
        DW 15
        DB 6
        DW OFFSET SF_BW_CF+735
        DW 2
        DW 15
RF_TDT2 DB 4
        DB 3
        DW OFFSET ORDER_BW_CF+25
        DW 1
        DW 5
        DB 4
        DW OFFSET ORDER_BW_CF+30
        DW 1
        DW 5
        DB 5
        DW OFFSET ORDER_BW_CF+35
        DW 1
        DW 5
        DB 6
        DW OFFSET ORDER_BW_CF+45
        DW 1
        DW 5
RF_TDT3 DB 1
        DB 6
        DW OFFSET FIR_CF+1406
        DW 98
        DW 14
RF_TDT4 DB 4
        DB 3
        DW OFFSET SF_BW_CF+450
        DW 5
        DW 15
        DB 4
        DW OFFSET SF_BW_CF+555
        DW 5
        DW 15
        DB 5
        DW OFFSET SF_BW_CF+660
        DW 5
        DW 15
        DB 6
        DW OFFSET SF_BW_CF+765
        DW 5
        DW 15
CHL_TDT DB "CHANNEL.TDT",0
CHL_TDT1 DB 3
         DB 2
         DW OFFSET CHL_NO
         DW 1
         DW 15
         DB 3
         DW OFFSET CHL_ER
         DW 1
         DW 15
         DB 4
         DW OFFSET PM_CONST
         DW 9
         DW 15
COD_TDT DB "CODERATE.TDT",0
MOD_TDT DB "MODSIZE.TDT",0
M_ARY DB 10
      DB 1,1
      DB 2,2
      DB 3,3
      DB 4,4
      DB 5,6
      DB 6,1
      DB 7,2
      DB 8,3
      DB 10,1
      DB 20,1

ALOHA_TDT DB "ALOHA.TDT",0
TREE_TDT DB "TREE.TDT",0
CSMA_TDT DB "CSMA.TDT",0
MA_TDT1 DB 1
        DB 0
        DW OFFSET MA_UP
        DW 2
        DW 5
MA_TDT2 DB 1
        DB 0
        DW OFFSET ITM_MA+3
        DW 20
        DW 9
MA_TDT3 DB 1
        DB 0
        DW OFFSET NUMBER_ITERATION
        DW 1
        DW 13
MA_TDT4 DB 1
        DB 0
        DW OFFSET MA_AMBF
        DW 1
        DW 10
MA_TDT5 DB 1
        DB 0
        DW OFFSET MA_CMBF
        DW 2
        DW 10
STAR_TDT DB "STARNET.TDT",0
S_TDT1 DB 1
       DB 0
       DW OFFSET LC_S+3
       DW 8
       DW 18
S_TDT3 DB 1
       DB 0
       DW OFFSET LC_S+12
       DW 8
       DW 18
S_TDT2 DB 1
```

```
       DB 0
       DW OFFSET PB_SN
       DW 4
       DW 5
ULOOP_TDT DB "UNILOOP.TDT",0
U_TDT1 DB 1
       DB 0
       DW OFFSET LC_UL+3
       DW 8
       DW 9
BLOOP_TDT DB "BIDLOOP.TDT",0
B_TDT1 DB 1
       DB 0
       DW OFFSET LC_BL+3
       DW 8
       DW 18
B_TDT3 DB 1
       DB 0
       DW OFFSET LC_BL+12
       DW 8
       DW 18
AFS_TDT1 DB 1
        DB 0
        DW OFFSET S_NN
        DW 1
        DW 5
AFS_TDT2 DB 1
        DB 0
        DW OFFSET ITM_S+3
        DW 64
        DW 9
FILE_HANDLE DW ?
STACK_POINTER1 DW ?
GDF DB 0FFH,59H,28,1,3,23,"┌┐┘└─│"
    DB 0FFH,30,3,"Generating Data Files",0FFH,79,25,0DH
LDB DB 0FFH,59H,28,1,3,24,"┌┐┘└─│"
    DB 0FFH,30,3,"Loading Star Data Base",0FFH,79,25,0DH
GUS DB 0FFH,59H,25,1,3,29,"┌┐┘└─│"
    DB 0FFH,27,3,"Generating Universe Program",0FFH,79,25,0DH
INCOM_DEF DB 0FFH,59H,24,1,5,31,"┌┐┘└─│"
    DB 0FFH,26,3,"Incomplete Link Configuration"
    DB 0FFH,27,5,"Strike any key to continue"
    DB 0FFH,56H,5,"K",0FFH,56H,5,"L",0FFH,79,25,0DH
INVAL_DEF DB 0FFH,59H,24,1,5,30,"┌┐┘└─│"
    DB 0FFH,27,3,"Invalid Link Configuration"
    DB 0FFH,27,5,"Strike any key to continue"
    DB 0FFH,56H,5,"K",0FFH,56H,5,"L",0FFH,79,25,0DH
INCOM_N_DEF DB 0FFH,59H,23,1,5,34,"┌┐┘└─│"
    DB 0FFH,25,3,"Incomplete Network Configuration"
    DB 0FFH,27,5,"Strike any key to continue"
    DB 0FFH,56H,5,"K",0FFH,56H,5,"L",0FFH,79,25,0DH

   LSDS DB 2
       DW CONST
       DW OFFSET DISBU
    DW ?
    DW ?
    DB 1
    DW OFFSET LSDS1
LSDS1 DW OFFSET A3
     DW CONST
     DB 0
     DB ?
     DW ?
     DW OFFSET AS4
     DW CONST
     DW OFFSET FCB1
     DW CONST
     DW OFFSET FCB2
     DW CONST
     DW OFFSET DISBU
     DW CONST

LSD DB 2
    DW CONST
    DW OFFSET DISBU
    DW ?
    DW ?
    DB 3
    DW OFFSET LSD1
    DW OFFSET LSD3
    DW OFFSET LSD4

LSD1 DW OFFSET A3
     DW CONST
     DB 0
     DB ?
     DW ?
     DW OFFSET A4
     DW CONST
     DW OFFSET FCB1
     DW CONST
     DW OFFSET FCB2
     DW CONST
     DW OFFSET DISBU
     DW CONST
LSD3 DW OFFSET A3
     DW CONST
     DB 0
     DB ?
     DW ?
     DW OFFSET A6
     DW CONST
     DW OFFSET FCB1
     DW CONST
     DW OFFSET FCB2
     DW CONST
     DW OFFSET DISBU
     DW CONST
LSD4 DW OFFSET A3
```

```
        DW CONST
        DB 0
        DB ?
        DW ?
        DW OFFSET A8
        DW CONST
        DW OFFSET FCB1
        DW CONST
        DW OFFSET FCB2
        DW CONST
        DW OFFSET DISBU
        DW CONST

   A3 DB "LOAD.COM",0
   A4 DB 7," CC UNI",0DH
   A6_LENGTH EQU 39
   A6 DB 10H," LINK20 BS BB BF UNI "
   LIB_STRING DB 200 DUP (?)
   A7_LENGTH EQU 18
   A7 DB "CLIB PASLIB -oUNI",0DH
   A8 DB 4," UNI",0DH
   A9 DB 8," UNILOOP",0DH
   AS4 DB 8," STARNET",0DH
   AS5 DB 7," PLOTPB",0DH
   AS6 DB 9," PLTTHRPT",0DH
   AS7 DB 9," PLTDELAY",0DH
   AS9 DB 9," PLTQUEUE",0DH
   AS8 DB 6," ALOHA",0DH
   AS10 DB 5," TREE",0DH
   AS11 DB 5," CSMA",0DH
   AS12 DB 9," -Z UNI.C",0DH
   AS13 DB 9," PLOTCONS",0DH
   AS14 DB 9," PLTTXINP",0DH
   AS15 DB 9," PLTRCOUT",0DH
   AS16 DB "POSTTEXT.DAT",0
   AS18 DB 8," BIDLOOP",0DH
   AS19 DB 9," PLTTXOUT",0DH
   AS20 DB 9," PLTRCINP",0DH
   FCB1 DB 30H DUP (?)
   FCB2 DB 30H DUP (?)
   DISBU DB 200 DUP (?)
   SBU2 DB 4000 DUP (?)

D1 DB 2
   DB 7
   DW OFFSET B1
   DB 9
   DW OFFSET B2
B1 DB "negarap"
B2 DB "ssuagarap"

C1 DB 225
   DB "#include <stdio.h>",0DH,0AH
   DB "#include ",22H,"type.h",22H,0DH,0AH
   DB "#define FIFO 100",0DH,0AH
   DB "struct{long int sample_stp;",0DH,0AH,"      int seed"
   DB ";}paragen;",0DH,0AH,"struct{long int samp_stp;",0DH,0AH
   DB "      int seed;",0DH,0AH,"      double stddev;}paragauss"
   DB ";",0DH,0AH
   DB "float tmp;",0DH,0AH
   DB "FILE *fp, *fopen();",0DH,0AH

C2 DW 188
   DB "fp=fopen(",22H,"stop.tdt",22H,",",22H,"r",22H,");",0DH,0AH
   DB "fscanf(fp,",22H,"%f",22H,",&tmp);",0DH,0AH
   DB "fclose(fp);",0DH,0AH
   DB "paragen.seed=1099;",0DH,0AH
   DB "paragen.sample_stp=(int)tmp;",0DH,0AH
   DB "paragauss.seed=19985;",0DH,0AH
   DB "paragauss.samp_stp=200000000;",0DH,0AH
   DB "paragauss.stddev=0;",0DH,0AH

ERROR_COUNT1 DW ?
ERROR_PROGRAM1 DB 80 DUP (?)
ERROR_PC1 EQU 15
ERROR_P1 DB ",1,",22H,"Display",22H,",1,"
ERROR_PC2 EQU 9
ERROR_P2 DB "*FIFO);",0DH,0AH
ERROR_PC3 EQU 8
ERROR_P3 DB "connect("
ADDER_LENGTH EQU 38
ADDER_LINE DB "connect(",22H,"Noise generator",22H,",0,",22H
   DB "Adder",22H,",1,"
ADDER_LENGTH1 EQU 9
ADDER_LINE1 DB "*FIFO);",0DH,0AH
STAR_NOISE_LENGTH EQU 61
STAR_NOISE DB "star(",22H,"Noise generator",22H,",gauss,"
  DB "&paragauss,sizeof(paragauss));",0DH,0AH
NUMBER_OF_BYTE DW 0

STAR_COUNT DW ?
CONNECT_COUNT DW ?
INT_COUNT DW ?
INT_COUNT1 DW ?
STAR_BASE_DAT DB "STAR_BAS.DAT",0
UNIVERSE_Q DB "UNI.C",0
STAR_BASE DB 4000 DUP (?)
STAR_POINTER DW 9 DUP (?)
DECLARE_INT DB 1500 DUP (?)
C_OVERHEAD DB "universe()",0DH,0AH,"{",0DH,0AH
C_END DB "return(0);",0DH,0AH,"}",0DH,0AH
DECLARE_INT1 DB 1500 DUP (?)
STAR_PROGRAM DB 2500 DUP (?)
CONNECT_PROGRAM DB 2500 DUP (?)

SOU_FL DB 4
       DB 1
       DW OFFSET SOURCE
       DB 2
       DW OFFSET SOURCE_SIN
```

```
        DB 3
        DW OFFSET SOURCE
        DB 4
        DW OFFSET SOURCE_WGN
MOD_FL  DB 9
        DB 1
        DW OFFSET BPSK
        DB 2
        DW OFFSET QPSK
        DB 3
        DW OFFSET PSK8
        DB 4
        DW OFFSET QAM16
        DB 5
        DW OFFSET QAM64
        DB 6
        DW OFFSET BFSK
        DB 7
        DW OFFSET FSK4
        DB 8
        DW OFFSET FSK4
        DB 10
        DW OFFSET TBPSKMOD
ECD_FL  DB 6
        DB 1
        DW OFFSET NOCOD
        DB 2
        DW OFFSET CON3
        DB 3
        DW OFFSET CON7
        DB 4
        DW OFFSET CON7
        DB 5
        DW OFFSET RS15
        DB 6
        DW OFFSET RS15
DIS_FL  DB 5
        DB 1
        DW OFFSET DIS_UNC
        DB 2
        DW OFFSET DIS_CO
        DB 3
        DW OFFSET DIS_CO
        DB 5
        DW OFFSET DIS_UNC
        DB 9
        DW OFFSET SINK
 CF_FL  DB 5
        DB 3
        DW OFFSET BUTTERWORTH_CF
        DB 4
        DW OFFSET CHEBYCHEV_CF
        DB 5
        DW OFFSET ELLIPTIC_CF
        DB 6
```

```
          DW OFFSET FIR_CF_FILE
          DB 7
          DW OFFSET FIR_CF_FILE
    RF_FL DB 5
          DB 3
          DW OFFSET BUTTERWORTH_RF
          DB 4
          DW OFFSET CHEBYCHEV_RF
          DB 5
          DW OFFSET ELLIPTIC_RF
          DB 6
          DW OFFSET FIR_RF
          DB 7
          DW OFFSET FIR_RF
   DCD_FL DB 6
          DB 1
          DW OFFSET NODEC
          DB 4
          DW OFFSET RS_DEC
          DB 2
          DW OFFSET VIT3
          DB 3
          DW OFFSET VIT7
          DB 5
          DW OFFSET VIT3Q
          DB 6
          DW OFFSET VIT7Q
 DEMOD_FL DB 9
          DB 1
          DW OFFSET SOFT
          DB 4
          DW OFFSET BPSK_DEM
          DB 5
          DW OFFSET QPSK_DEM
          DB 6
          DW OFFSET PSK8_DEM
          DB 7
          DW OFFSET QAM16_DEM
          DB 8
          DW OFFSET QAM64_DEM
          DB 9
          DW OFFSET BFSK_DEM
          DB 10
          DW OFFSET FSK4_DEM
          DB 13
          DW OFFSET TBPSKDEM
   CHL_FL DB 5
          DB 2
          DW OFFSET FGAUSS
          DB 4
          DW OFFSET PGAUSS
          DB 7
          DW OFFSET BSC
          DB 8
          DW OFFSET CBSC
```

```
       DB 9
       DW OFFSET CBSC
SOURCE DB 4,"gen "
SOURCE_SIN DB 4,"sin "
SOURCE_WGN DB 4,"wgn "
BPSK DB 6,"bpmod "
QPSK DB 6,"qpmod "
PSK8 DB 6,"8pmod "
QAM16 DB 7,"16qmod "
QAM64 DB 7,"64qmod "
BFSK DB 6,"bfmod "
FSK4 DB 6,"qfmod "
NOCOD DB 6,"nocod "
CON3 DB 6,"conv3 "
CON7 DB 6,"conv7 "
RS15 DB 6,"rscod "
BUTTERWORTH_CF DB 6,"txbut "
CHEBYCHEV_CF DB 7,"txcheb "
ELLIPTIC_CF DB 6,"txell "
FIR_CF_FILE DB 6,"txfir "
BUTTERWORTH_RF DB 6,"rcbut "
CHEBYCHEV_RF DB 7,"rccheb "
ELLIPTIC_RF DB 6,"rcell "
FIR_RF DB 6,"rcfir "
NODEC DB 6,"nodec "
SOFTV DB 6,"softv "
HARDV DB 6,"hardv "
RS_DEC DB 6,"rsdec "
SOFT DB 7,"no_dem "
NONE DB 5,"none "
BPSK_DEM DB 6,"bpdem "
QPSK_DEM DB 6,"qpdem "
PSK8_DEM DB 6,"8pdem "
QAM16_DEM DB 7,"16qdem "
QAM64_DEM DB 7,"64qdem "
BFSK_DEM DB 6,"bfdem "
FSK4_DEM DB 6,"qfdem "
FGAUSS DB 10,"gauss add "
PGAUSS DB 9,"prop add "
BSC DB 4,"bsc "
CBSC DB 5,"cbsc "
DIS_UNC DB 5,"dunc "
DIS_CO DB 6,"dconv "
SINK DB 5,"sink "
VIT3 DB 5,"vit3 "
VIT7 DB 5,"vit7 "
VIT3Q DB 6,"vit3q "
VIT7Q DB 6,"vit7q "
TBPSKMOD DB 7,"tbpmod "
TBPSKDEM DB 7,"tbpdem "

FIFO_POINTER DW 0
VALID_TABLE DB 27
  DW OFFSET AC1
  DW OFFSET BC1
```

```
    DW OFFSET AC2
    DW OFFSET BC2
    DW OFFSET AC3
    DW OFFSET BC3
    DW OFFSET AC4
    DW OFFSET BC4
    DW OFFSET AC5
    DW OFFSET BC5
    DW OFFSET AC6
    DW OFFSET BC6
    DW OFFSET AC7
    DW OFFSET BC7
    DW OFFSET AC8
    DW OFFSET BC8
    DW OFFSET AC9
    DW OFFSET BC9
    DW OFFSET AC10
    DW OFFSET BC10
    DW OFFSET AC11
    DW OFFSET BC11
    DW OFFSET AC12
    DW OFFSET BC12
    DW OFFSET AC13
    DW OFFSET BC13
    DW OFFSET AC14
    DW OFFSET BC14
    DW OFFSET AC15
    DW OFFSET BC15
    DW OFFSET AC16
    DW OFFSET BC16
    DW OFFSET AC17
    DW OFFSET BC17
    DW OFFSET AC18
    DW OFFSET BC18
    DW OFFSET AC19
    DW OFFSET BC19
    DW OFFSET AC20
    DW OFFSET BC20
    DW OFFSET AC21
    DW OFFSET BC21
    DW OFFSET AC22
    DW OFFSET BC22
    DW OFFSET AC23
    DW OFFSET BC23
    DW OFFSET AC24
    DW OFFSET BC24
    DW OFFSET AC25
    DW OFFSET BC25
    DW OFFSET AC26
    DW OFFSET BC26
    DW OFFSET AC27
    DW OFFSET BC27

AC1 DB 2
    DB 1,1,1,1,2,1,2,1
    DB 1,1,1,1,4,1,2,1
BC1 DB 1,1,1,1,1,1,1,1

AC2 DB 2
    DB 1,1,2,1,2,1,2,1
    DB 1,1,2,1,4,1,2,1
BC2 DB 2,2,2,2,2,2,2,2

AC3 DB 2
    DB 1,1,3,1,2,1,2,1
    DB 1,1,3,1,4,1,2,1
BC3 DB 3,3,3,2,2,3,3,2

AC4 DB 2
    DB 1,1,4,1,2,1,2,1
    DB 1,1,4,1,4,1,2,1
BC4 DB 4,4,4,2,2,4,4,2

AC5 DB 2
    DB 1,1,5,1,2,1,2,1
    DB 1,1,5,1,4,1,2,1
BC5 DB 6,6,6,2,2,6,6,2

AC6 DB 2
    DB 1,1,6,1,2,1,2,1
    DB 1,1,6,1,4,1,2,1
BC6 DB 1,1,1,4,4,1,1,4

AC7 DB 2
    DB 1,1,7,1,2,1,2,1
    DB 1,1,7,1,4,1,2,1
BC7 DB 2,2,2,8,8,2,2,8


AC8 DB 8
    DB 1,2,1,1,2,1,1,2
    DB 1,2,1,1,4,1,1,2
    DB 1,3,1,1,2,1,1,2
    DB 1,3,1,1,4,1,1,2
    DB 1,2,1,1,2,1,2,3
    DB 1,2,1,1,4,1,2,3
    DB 1,3,1,1,2,1,2,3
    DB 1,3,1,1,4,1,2,3
BC8 DB 1,1,2,2,2,2,1,2

AC9 DB 8
    DB 1,2,2,1,2,1,1,2
    DB 1,2,2,1,4,1,1,2
    DB 1,3,2,1,2,1,1,2
    DB 1,3,2,1,4,1,1,2
    DB 1,2,2,1,2,1,2,3
    DB 1,2,2,1,4,1,2,3
    DB 1,3,2,1,2,1,2,3
    DB 1,3,2,1,4,1,2,3
BC9 DB 1,1,2,2,2,2,1,2
```

```
AC10 DB 4
  DB 1,2,6,1,2,1,2,3
  DB 1,2,6,1,4,1,2,3
  DB 1,3,6,1,2,1,2,3
  DB 1,3,6,1,4,1,2,3
BC10 DB 1,1,2,8,8,2,1,8

AC11 DB 2
  DB 1,5,4,1,2,1,2,4
  DB 1,5,4,1,4,1,2,4
BC11 DB 18,18,30,15,15,30,18,15

AC12 DB 1
  DB 1,1,9,1,3,1,3,1
BC12 DB 1,1,1,1,1

AC13 DB 2
  DB 1,2,9,1,3,1,3,3
  DB 1,3,9,1,3,1,3,3
BC13 DB 1,1,2,2,1

AC14 DB 32
  DB 1,1,1,3,2,3,2,1
  DB 1,1,1,3,4,3,2,1
  DB 1,1,1,4,2,3,2,1
  DB 1,1,1,4,4,3,2,1
  DB 1,1,1,5,2,3,2,1
  DB 1,1,1,5,4,3,2,1
  DB 1,1,1,6,2,3,2,1
  DB 1,1,1,6,4,3,2,1
  DB 1,1,1,3,2,4,2,1
  DB 1,1,1,3,4,4,2,1
  DB 1,1,1,4,2,4,2,1
  DB 1,1,1,4,4,4,2,1
  DB 1,1,1,5,2,4,2,1
  DB 1,1,1,5,4,4,2,1
  DB 1,1,1,6,2,4,2,1
  DB 1,1,1,6,4,4,2,1
  DB 1,1,1,3,2,5,2,1
  DB 1,1,1,3,4,5,2,1
  DB 1,1,1,4,2,5,2,1
  DB 1,1,1,4,4,5,2,1
  DB 1,1,1,5,2,5,2,1
  DB 1,1,1,5,4,5,2,1
  DB 1,1,1,6,2,5,2,1
  DB 1,1,1,6,4,5,2,1
  DB 1,1,1,3,2,6,2,1
  DB 1,1,1,3,4,6,2,1
  DB 1,1,1,4,2,6,2,1
  DB 1,1,1,4,4,6,2,1
  DB 1,1,1,5,2,6,2,1
  DB 1,1,1,5,4,6,2,1
  DB 1,1,1,6,2,6,2,1
  DB 1,1,1,6,4,6,2,1
BC14 DB 1,1,1,1,1,1,1,1,1,1

AC15 DB 32
  DB 1,1,10,3,2,3,2,1
  DB 1,1,10,3,4,3,2,1
  DB 1,1,10,4,2,3,2,1
  DB 1,1,10,4,4,3,2,1
  DB 1,1,10,5,2,3,2,1
  DB 1,1,10,5,4,3,2,1
  DB 1,1,10,6,2,3,2,1
  DB 1,1,10,6,4,3,2,1
  DB 1,1,10,3,2,4,2,1
  DB 1,1,10,3,4,4,2,1
  DB 1,1,10,4,2,4,2,1
  DB 1,1,10,4,4,4,2,1
  DB 1,1,10,5,2,4,2,1
  DB 1,1,10,5,4,4,2,1
  DB 1,1,10,6,2,4,2,1
  DB 1,1,10,6,4,4,2,1
  DB 1,1,10,3,2,5,2,1
  DB 1,1,10,3,4,5,2,1
  DB 1,1,10,4,2,5,2,1
  DB 1,1,10,4,4,5,2,1
  DB 1,1,10,5,2,5,2,1
  DB 1,1,10,5,4,5,2,1
  DB 1,1,10,6,2,5,2,1
  DB 1,1,10,6,4,5,2,1
  DB 1,1,10,3,2,6,2,1
  DB 1,1,10,3,4,6,2,1
  DB 1,1,10,4,2,6,2,1
  DB 1,1,10,4,4,6,2,1
  DB 1,1,10,5,2,6,2,1
  DB 1,1,10,5,4,6,2,1
  DB 1,1,10,6,2,6,2,1
  DB 1,1,10,6,4,6,2,1
BC15 DB 1,1,1,40,40,40,40,1,1,40

AC16 DB 32
  DB 2,1,9,3,2,3,3,1
  DB 2,1,9,3,4,3,3,1
  DB 2,1,9,4,2,3,3,1
  DB 2,1,9,4,4,3,3,1
  DB 2,1,9,5,2,3,3,1
  DB 2,1,9,5,4,3,3,1
  DB 2,1,9,6,2,3,3,1
  DB 2,1,9,6,4,3,3,1
  DB 2,1,9,3,2,4,3,1
  DB 2,1,9,3,4,4,3,1
  DB 2,1,9,4,2,4,3,1
  DB 2,1,9,4,4,4,3,1
  DB 2,1,9,5,2,4,3,1
```

```
     DB 2,1,9,5,4,4,3,1
     DB 2,1,9,6,2,4,3,1
     DB 2,1,9,6,4,4,3,1
     DB 2,1,9,3,2,5,3,1
     DB 2,1,9,3,4,5,3,1
     DB 2,1,9,4,2,5,3,1
     DB 2,1,9,4,4,5,3,1
     DB 2,1,9,5,2,5,3,1
     DB 2,1,9,5,4,5,3,1
     DB 2,1,9,6,2,5,3,1
     DB 2,1,9,6,4,5,3,1
     DB 2,1,9,3,2,6,3,1
     DB 2,1,9,3,4,6,3,1
     DB 2,1,9,4,2,6,3,1
     DB 2,1,9,4,4,6,3,1
     DB 2,1,9,5,2,6,3,1
     DB 2,1,9,5,4,6,3,1
     DB 2,1,9,6,2,6,3,1
     DB 2,1,9,6,4,6,3,1
BC16 DB 1,1,1,1,1

AC17 DB 32
     DB 4,1,9,3,2,3,3,1
     DB 4,1,9,3,4,3,3,1
     DB 4,1,9,4,2,3,3,1
     DB 4,1,9,4,4,3,3,1
     DB 4,1,9,5,2,3,3,1
     DB 4,1,9,5,4,3,3,1
     DB 4,1,9,6,2,3,3,1
     DB 4,1,9,6,4,3,3,1
     DB 4,1,9,3,2,4,3,1
     DB 4,1,9,3,4,4,3,1
     DB 4,1,9,4,2,4,3,1
     DB 4,1,9,4,4,4,3,1
     DB 4,1,9,5,2,4,3,1
     DB 4,1,9,5,4,4,3,1
     DB 4,1,9,6,2,4,3,1
     DB 4,1,9,6,4,4,3,1
     DB 4,1,9,3,2,5,3,1
     DB 4,1,9,3,4,5,3,1
     DB 4,1,9,4,2,5,3,1
     DB 4,1,9,4,4,5,3,1
     DB 4,1,9,5,2,5,3,1
     DB 4,1,9,5,4,5,3,1
     DB 4,1,9,6,2,5,3,1
     DB 4,1,9,6,4,5,3,1
     DB 4,1,9,3,2,6,3,1
     DB 4,1,9,3,4,6,3,1
     DB 4,1,9,4,2,6,3,1
     DB 4,1,9,4,4,6,3,1
     DB 4,1,9,5,2,6,3,1
     DB 4,1,9,5,4,6,3,1
     DB 4,1,9,6,2,6,3,1
     DB 4,1,9,6,4,6,3,1
BC17 DB 1,1,1,1,1
```

```
AC18 DB 8
   DB 2,1,9,3,2,1,3,1
   DB 2,1,9,3,4,1,3,1
   DB 2,1,9,4,2,1,3,1
   DB 2,1,9,4,4,1,3,1
   DB 2,1,9,5,2,1,3,1
   DB 2,1,9,5,4,1,3,1
   DB 2,1,9,6,2,1,3,1
   DB 2,1,9,6,4,1,3,1
BC18 DB 1,1,1,1

AC19 DB 8
   DB 4,1,9,3,2,1,3,1
   DB 4,1,9,3,4,1,3,1
   DB 4,1,9,4,2,1,3,1
   DB 4,1,9,4,4,1,3,1
   DB 4,1,9,5,2,1,3,1
   DB 4,1,9,5,4,1,3,1
   DB 4,1,9,6,2,1,3,1
   DB 4,1,9,6,4,1,3,1
BC19 DB 1,1,1,1


AC20 DB 8
   DB 2,1,9,1,2,3,3,1
   DB 2,1,9,1,4,3,3,1
   DB 2,1,9,1,2,4,3,1
   DB 2,1,9,1,4,4,3,1
   DB 2,1,9,1,2,5,3,1
   DB 2,1,9,1,4,5,3,1
   DB 2,1,9,1,2,6,3,1
   DB 2,1,9,1,4,6,3,1
BC20 DB 1,1,1,1

AC21 DB 8
   DB 4,1,9,1,2,3,3,1
   DB 4,1,9,1,4,3,3,1
   DB 4,1,9,1,2,4,3,1
   DB 4,1,9,1,4,4,3,1
   DB 4,1,9,1,2,5,3,1
   DB 4,1,9,1,4,5,3,1
   DB 4,1,9,1,2,6,3,1
   DB 4,1,9,1,4,6,3,1
BC21 DB 1,1,1,1


AC22 DB 4
   DB 2,1,9,3,1,1,3,1
   DB 2,1,9,4,1,1,3,1
   DB 2,1,9,5,1,1,3,1
   DB 2,1,9,6,1,1,3,1
BC22 DB 1,1
```

```
AC23 DB 4
   DB 4,1,9,3,1,1,3,1
   DB 4,1,9,4,1,1,3,1
   DB 4,1,9,5,1,1,3,1
   DB 4,1,9,6,1,1,3,1
BC23 DB 1,1


AC24 DB 4
   DB 2,1,9,1,1,3,3,1
   DB 2,1,9,1,1,4,3,1
   DB 2,1,9,1,1,5,3,1
   DB 2,1,9,1,1,6,3,1
BC24 DB 1,1

AC25 DB 4
   DB 4,1,9,1,1,3,3,1
   DB 4,1,9,1,1,4,3,1
   DB 4,1,9,1,1,5,3,1
   DB 4,1,9,1,1,6,3,1
BC25 DB 1,1


AC26 DB 16
   DB 2,1,9,3,1,3,3,1
   DB 2,1,9,4,1,3,3,1
   DB 2,1,9,5,1,3,3,1
   DB 2,1,9,6,1,3,3,1
   DB 2,1,9,3,1,4,3,1
   DB 2,1,9,4,1,4,3,1
   DB 2,1,9,5,1,4,3,1
   DB 2,1,9,6,1,4,3,1
   DB 2,1,9,3,1,5,3,1
   DB 2,1,9,4,1,5,3,1
   DB 2,1,9,5,1,5,3,1
   DB 2,1,9,6,1,5,3,1
   DB 2,1,9,3,1,6,3,1
   DB 2,1,9,4,1,6,3,1
   DB 2,1,9,5,1,6,3,1
   DB 2,1,9,6,1,6,3,1
BC26 DB 1,1,1

AC27 DB 16
   DB 4,1,9,3,1,3,3,1
   DB 4,1,9,4,1,3,3,1
   DB 4,1,9,5,1,3,3,1
   DB 4,1,9,6,1,3,3,1
   DB 4,1,9,3,1,4,3,1
   DB 4,1,9,4,1,4,3,1
   DB 4,1,9,5,1,4,3,1
   DB 4,1,9,6,1,4,3,1
   DB 4,1,9,3,1,5,3,1
   DB 4,1,9,4,1,5,3,1
   DB 4,1,9,5,1,5,3,1
   DB 4,1,9,6,1,5,3,1
```

```
    DB 4,1,9,3,1,6,3,1
    DB 4,1,9,4,1,6,3,1
    DB 4,1,9,5,1,6,3,1
    DB 4,1,9,6,1,6,3,1
  BC27 DB 1,1,1
CONST ENDS

EXTRN CREATE_FILE:NEAR,WRITE_TO_FILE:NEAR,CLOSE_FILE:NEAR
EXTRN READ_FROM_FILE:NEAR,OPEN_FILE_READ:NEAR
EXTRN SET_RETURN_ADDRESS:NEAR,SET_CRITICAL_ADDRESS:NEAR
EXTRN LOAD_PROGRAM:NEAR

EXTRN SAVE_SCREEN:NEAR,RECOVER_SCREEN:NEAR,DOUBLE_DIS_LINE:NEAR
EXTRN CLS:NEAR,CURSER_POSITION:NEAR

EXTRN CLEAR_BUFFER_GET_KEY:NEAR,CLEAR_BUFFER:NEAR


CODE SEGMENT 'CODE' PUBLIC
    ASSUME CS:CODE,DS:CONST,ES:NOTHING,SS:STACK

    PUBLIC RUN_SIMULATE,CI_S1,RE_S1,POSTRUN_LINK

    RUN_SIMULATE PROC NEAR
        MOV STACK_POINTER1,SP
        PUSH AX
        CALL FILE_PREPARE2
        MOV SI,OFFSET SBU2
        CALL SAVE_SCREEN
        CALL CLS
        MOV SI,OFFSET GDF
        CALL DOUBLE_DIS_LINE
        POP AX
        TEST AH,1
        JNZ RS1
        CALL CHECK_DEFINITION
        JC RS7
        CALL VALID_CONFIGURATION
        CALL LINK_PARA_FILE
        CALL CHECK_CONFIGURATION
        JC RS39
        MOV AX,OFFSET RS5
        JMP AX
      RS39:
        XOR AL,AL
        MOV LOAD_STATUS,AL
        CALL CLS
        MOV SI,OFFSET LDB
        CALL DOUBLE_DIS_LINE
        CALL READ_STAR_BASE
        CALL CLS
        MOV SI,OFFSET GUS
        CALL DOUBLE_DIS_LINE
        CALL CODE_CONVERSION_ALL
        CALL STAR_GENERATOR
  CALL INTEGER_DECLARE
  CALL INTEGER_DECLARE1
  CALL CONNECT_GENERATOR
  CALL GENERATE_UNIVERSE
  CALL CREATE_LIB
  MOV LOAD_STATUS,1
  MOV SI,OFFSET LSD
RS3:
  PUSH SI
  CALL CLS
  POP SI
  CALL LOAD_PROGRAM
RS7:
  MOV SI,OFFSET SBU2
  CALL RECOVER_SCREEN
  CALL CLEAR_BUFFER
  RET
RS1:
  CALL CHECK_N_DEFINITION
  JC RS7
  CALL NET_PARA_FILE
  MOV SI,OFFSET LSDS1
  CMP NET_CON,2
  JNZ RS24
  CMP MA_CON,1
  JNZ RS21
  MOV WORD PTR [SI+8],OFFSET AS8
  JMP RS22
RS21:
  CMP MA_CON,2
  JNZ RS23
  MOV WORD PTR [SI+8],OFFSET AS10
  JMP RS22
RS23:
  MOV WORD PTR [SI+8],OFFSET AS11
RS22:
  MOV SI,OFFSET LSDS
  JMP RS3
  RET
RS5:
  MOV SI,OFFSET LSDS1
  MOV WORD PTR [SI+8],OFFSET A8
  MOV SI,OFFSET LSDS
  JMP RS3
RS24:
  CMP SAF_TP,1
  JZ RS96
  CMP SAF_TP,2
  JZ RS97
  MOV WORD PTR [SI+8],OFFSET AS18
  JMP RS22
RS96:
  MOV WORD PTR [SI+8],OFFSET AS4
  JMP RS22
RS97:
    MOV WORD PTR [SI+8],OFFSET A9
    JMP RS22
RUN_SIMULATE ENDP

CI_S1 PROC NEAR
    MOV STACK_POINTER1,SP
    PUSH AX
    CALL FILE_PREPARE2
    MOV SI,OFFSET SBU2
    CALL SAVE_SCREEN
    MOV SI,OFFSET LSDS1
    POP AX
    CMP AH,2
    JZ CIS5
    CMP AH,3
    JZ CIS3
    MOV DX,OFFSET AS16
    MOV AX,OFFSET A99
    JMP AX
  CIS5:
    MOV WORD PTR [SI+8],OFFSET AS7
    JMP CIS2
  CIS3:
    MOV WORD PTR [SI+8],OFFSET AS6
  CIS2:
    MOV SI,OFFSET LSDS
    JMP RS3
    RET
CI_S1 ENDP

POSTRUN_LINK PROC NEAR
    MOV STACK_POINTER1,SP
    PUSH AX
    CALL FILE_PREPARE2
    MOV SI,OFFSET SBU2
    CALL SAVE_SCREEN
    MOV SI,OFFSET LSDS1
    POP AX
    CMP AH,8
    JZ PL1
    CMP AH,2
    JZ PL2
    CMP AH,4
    JZ PL3
    CMP AH,3
    JZ PL7
    CMP AH,5
    JZ PL8
    MOV WORD PTR [SI+8],OFFSET AS5
    JMP PL4
  PL3:
    MOV WORD PTR [SI+8],OFFSET AS15
    JMP PL4
  PL2:
    MOV WORD PTR [SI+8],OFFSET AS14
    JMP PL4
  PL1:
    MOV WORD PTR [SI+8],OFFSET AS13
  PL4:
    MOV AX,OFFSET CIS2
    JMP AX
  PL7:
    MOV WORD PTR [SI+8],OFFSET AS19
    JMP PL4
  PL8:
    MOV WORD PTR [SI+8],OFFSET AS20
    JMP PL4
POSTRUN_LINK ENDP

RE_S1 PROC NEAR
    MOV STACK_POINTER1,SP
    AND AH,0FH
    PUSH AX
    CALL FILE_PREPARE2
    MOV SI,OFFSET SBU2
    CALL SAVE_SCREEN
    POP AX
    CMP AH,1
    JZ A98
    CMP AH,2
    JZ A59
    MOV DX,OFFSET DATA_FILE_NAME1
    JMP A99
   A98:
    MOV DX,OFFSET DATA_FILE_NAME2
    JMP A99
  A59:
    MOV DX,OFFSET DATA_FILE_NAME3
  A99:
    CALL OPEN_FILE_READ
    MOV FILE_HANDLE,AX
    MOV DI,OFFSET CONNECT_PROGRAM

    XOR CX,CX
    MOV NUMBER_OF_BYTE,CX
  A12:
    CMP NUMBER_OF_BYTE,0
    JZ A11
    DEC NUMBER_OF_BYTE
    MOVSB
    CMP WORD PTR [SI-1],0A0DH
    JZ A122
    CMP WORD PTR [SI-1],0D0AH
    JZ A121
    CMP BYTE PTR [SI-1],0DH
    JZ A56
    CMP BYTE PTR [SI-1],0AH
    JNZ A12
    MOV BYTE PTR ES:[DI-1],0DH
    JMP A56
```

```
A122:
  MOV BYTE PTR ES:[DI-1],0DH
  JMP A561
A121:
  MOV BYTE PTR ES:[DI],0DH
A561:
  CMP NUMBER_OF_BYTE,0
  JZ A56
  INC SI
  DEC NUMBER_OF_BYTE
A56:
  INC CX
  CMP CX,24
  JNZ A12
  CALL DISPLAY_A_PAGE
  MOV DI,OFFSET CONNECT_PROGRAM
  XOR CX,CX
  JMP A12
A11:
  PUSH CX
  MOV CX,4000
  MOV BX,FILE_HANDLE
  MOV DX,OFFSET SBU
  CALL READ_FROM_FILE
  MOV NUMBER_OF_BYTE,AX
  CMP AX,0
  POP CX
  JZ A14
  MOV SI,OFFSET SBU
  JMP A12
A14:
  CMP CX,0
  JZ A15
  CALL DISPLAY_A_PAGE
A15:

  MOV BX,FILE_HANDLE
  CALL CLOSE_FILE
  MOV AX,OFFSET RS7
  JMP AX


DISPLAY_A_PAGE:
  PUSH SI
  PUSH CX
  CALL CLS
  POP CX
  XOR DX,DX
  MOV SI,OFFSET CONNECT_PROGRAM
A13:
  PUSH CX
  PUSH DX
  CALL CURSER_POSITION
  CALL DOUBLE_DIS_LINE
  CMP BYTE PTR DS:[SI],0DH
```

```
    JNZ A57
    INC SI
  A57:
    CMP BYTE PTR DS:[SI],0AH
    JNZ A58
    INC SI
  A58:
    POP DX
    INC DH
    POP CX
  LOOP A13
    PUSH CX
    CALL CLEAR_BUFFER_GET_KEY
    POP CX
    POP SI
    RET
RE_S1 ENDP

CHECK_DEFINITION PROC NEAR
    MOV SI,OFFSET SOU_CON
    MOV CX,8
  CDP1:
    CMP BYTE PTR [SI],0
    JZ CDP2
    INC SI
  LOOP CDP1
    CLC
    RET
  CDP2:
    CALL CLS
    MOV SI,OFFSET INCOM_DEF
    CALL DOUBLE_DIS_LINE
    CALL CLEAR_BUFFER_GET_KEY
    STC
    RET
CHECK_DEFINITION ENDP

CHECK_N_DEFINITION PROC NEAR
    CMP NET_CON,0
    JZ CCFN1
    CMP NET_CON,1
    JZ CCFN2
    CMP MA_CON,0
    JZ CCFN1
    CLC
    RET
  CCFN2:
    CMP SAF_TP,0
    JZ CCFN1
    CMP SAF_RTG,0
    JZ CCFN1
    CLC
    RET
  CCFN1:
    CALL CLS
    MOV SI,OFFSET INCOM_N_DEF
    CALL DOUBLE_DIS_LINE
    CALL CLEAR_BUFFER_GET_KEY
    STC
    RET
CHECK_N_DEFINITION ENDP

CHECK_CONFIGURATION PROC NEAR
    MOV SI,OFFSET SOU_CON
    MOV DI,OFFSET O_LINK_NET
    MOV CX,4
  CC2:
    MOV AX,[SI]
    CMP AX,[DI]
    JNZ CC1
    INC SI
    INC SI
    INC DI
    INC DI
  LOOP CC2
    TEST LOAD_STATUS,1
    JZ CC3
    CLC
    RET
  CC1:
    MOV SI,OFFSET SOU_CON
    MOV DI,OFFSET O_LINK_NET
    MOV CX,4
    REP MOVSW
  CC3:
    STC
    RET
CHECK_CONFIGURATION ENDP

VALID_CONFIGURATION PROC NEAR
    MOV SI,OFFSET VALID_TABLE
    MOV CL,[SI]
    XOR CH,CH
    INC SI

    VCP1:
       PUSH CX
       MOV DI,[SI]
       MOV CL,[DI]
       XOR CH,CH
       INC DI

       VCP2:
          CALL CHECK_AN_ITEM
          JAE VCP3
          ADD DI,8
       LOOP VCP2

       ADD SI,4
       POP CX
```

```
        LOOP VCP1

        CALL CLS
        MOV SI,OFFSET INVAL_DEF
        CALL DOUBLE_DIS_LINE
        CALL CLEAR_BUFFER_GET_KEY
        MOV SP,STACK_POINTER1
        MOV AX,OFFSET RS7
        JMP AX

      VCP3:
        POP CX
        MOV SI,[SI+2]
        MOV FIFO_POINTER,SI
        RET


      CHECK_AN_ITEM:
        MOV AL,SOU_CON
        CMP AL,[DI]
        JNZ VCP4
        MOV AL,ECD_CON
        CMP AL,[DI+1]
        JNZ VCP4
        MOV AL,MOD_CON
        CMP AL,[DI+2]
        JNZ VCP4
        MOV AL,CF_CON
        CMP AL,[DI+3]
        JNZ VCP4
        MOV AL,CHL_CON
        CMP AL,[DI+4]
        JNZ VCP4
        MOV AL,RF_CON
        CMP AL,[DI+5]
        JNZ VCP4
        MOV AL,DEMOD_CON
        CMP AL,[DI+6]
        JNZ VCP4
        MOV AL,DCD_CON
        CMP AL,[DI+7]
        JNZ VCP4
        CLC
        RET
      VCP4:
        STC
        RET
    VALID_CONFIGURATION ENDP

    CREATE_LIB PROC NEAR
        MOV DI,OFFSET LIB_STRING
        MOV SI,OFFSET SOU_FL
        MOV AL,SOU_CON
        CALL ADD_LIB
        MOV SI,OFFSET MOD_FL
```

```
  MOV AL,MOD_CON
  CALL ADD_LIB

  CMP SOU_CON,1
  JNZ CLP102
  MOV SI,OFFSET ECD_FL
  MOV AL,ECD_CON
  CALL ADD_LIB
CLP102:

  CMP MOD_CON,9
  JNZ CLP91
  CMP SOU_CON,1
  JZ CLP91
  MOV AL,MOD_CON
CLP91:
  MOV SI,OFFSET DIS_FL
  CALL ADD_LIB

  MOV SI,OFFSET CF_FL
  MOV AL,CF_CON
  CALL ADD_LIB
  MOV SI,OFFSET RF_FL
  MOV AL,RF_CON
  CALL ADD_LIB

  CMP SOU_CON,1
  JNZ CLP103
  MOV SI,OFFSET DCD_FL
  MOV AL,DCD_CON
  CMP DCD_CON,4
  JZ CLP2
  CMP DCD_CON,1
  JZ CLP2
  CMP MOD_CON,2
  JNZ CLP3
  CMP DCD_CON,3
  JZ CLP3
  ADD AL,ECD_CON
  INC AL
  JMP CLP2
CLP3:
  MOV AL,ECD_CON
CLP2:
  CALL ADD_LIB
CLP103:

  MOV SI,OFFSET DEMOD_FL
  CALL ADJUST_DEMOD
  CALL ADD_LIB

  MOV SI,OFFSET CHL_FL
  MOV AL,CHL_CON
  CMP AL,3
  JNZ CLP4
```

```
    ADD AL,ECD_CON
    ADD AL,3
  CLP4:
    CALL ADD_LIB

    ADD DX,A6_LENGTH
    MOV SI,OFFSET A7
    MOV CX,A7_LENGTH
    REP MOVSB
    MOV SI,OFFSET A6
    MOV [SI],DL
    RET


  ADJUST_DEMOD:
    MOV AL,DEMOD_CON
    CMP AL,2
    JNZ CLP9
    ADD AL,MOD_CON
    INC AL
  CLP9:
    RET
CREATE_LIB ENDP

ADD_LIB PROC NEAR
    MOV CL,[SI]
    XOR CH,CH
    INC SI
  ALP1:
    CMP AL,[SI]
    JZ ALP2
    ADD SI,3
  LOOP ALP1
    RET
  ALP2:
    MOV SI,[SI+1]
    MOV CL,[SI]
    INC SI
    ADD DX,CX
    REP MOVSB
    RET
ADD_LIB ENDP

GENERATE_UNIVERSE PROC NEAR
    MOV DX,OFFSET UNIVERSE_Q
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX
    MOV CX,INT_COUNT
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET DECLARE_INT
    CALL WRITE_TO_FILE
    MOV CX,15
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET C_OVERHEAD
    CALL WRITE_TO_FILE
    MOV CX,INT_COUNT1
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET DECLARE_INT1
    CALL WRITE_TO_FILE
    MOV CX,STAR_COUNT
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET STAR_PROGRAM
    CALL WRITE_TO_FILE
    MOV CX,CONNECT_COUNT
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET CONNECT_PROGRAM
    CALL WRITE_TO_FILE
    MOV CX,15
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET C_END
    CALL WRITE_TO_FILE
    MOV BX,FILE_HANDLE
    CALL CLOSE_FILE
    RET
GENERATE_UNIVERSE ENDP

STAR_GENERATOR PROC NEAR
    XOR AL,AL
    XOR AH,AH
    MOV ERROR_COUNT1,AX
    MOV AH,SOU_CON
    XOR DX,DX
    MOV SI,OFFSET SBU
    MOV DI,OFFSET STAR_PROGRAM
    MOV BX,OFFSET STAR_POINTER
    CALL ONE_LINE_STAR

    CMP MOD_CON,9
    JNZ SGP97
    CMP CHL_CON,3
    JNZ SGP98
  SGP97:
    MOV AL,1
    MOV AH,ECD_CON
    CALL ONE_LINE_STAR
    CALL ERROR_PATH1
  SGP98:

    CMP MOD_CON,9
    JZ SGP95
    MOV AL,2
    MOV AH,MOD_CON
    CALL ONE_LINE_STAR
  SGP95:

    MOV AL,3
    MOV AH,CF_CON
    CALL ONE_LINE_STAR
    MOV AL,4
    MOV AH,CHL_CON
    CALL ONE_LINE_STAR
    MOV AL,5
    MOV AH,RF_CON
    CALL ONE_LINE_STAR

    CMP MOD_CON,9
    JZ SGP96
    CALL ADJUST_DEMOD
    MOV AH,AL
    MOV AL,6
    CALL ONE_LINE_STAR
  SGP96:

    CMP MOD_CON,9
    JNZ SGP997
    CMP CHL_CON,3
    JNZ SGP998
  SGP997:
    MOV AL,7
    MOV AH,DCD_CON
    CALL ONE_LINE_STAR
  SGP998:

    MOV AL,8
    MOV AH,1
    CMP MOD_CON,9
    JNZ SGP94
    CMP SOU_CON,1
    JZ SGP94
    MOV AH,MOD_CON
  SGP94:
    CALL ONE_LINE_STAR

    CMP CHL_CON,1
    JZ SGP1
    CMP CHL_CON,3
    JZ SGP1
    MOV CX,STAR_NOISE_LENGTH
    ADD DX,STAR_NOISE_LENGTH
    MOV SI,OFFSET STAR_NOISE
    REP MOVSB
  SGP1:
    MOV BYTE PTR ES:[DI],0
    MOV ES:STAR_COUNT,DX
    RET
STAR_GENERATOR ENDP

ERROR_PATH1 PROC NEAR
    PUSH SI
    PUSH DI
    MOV SI,DI
    DEC SI
    DEC SI
  EP12:
    DEC SI
    CMP SI,OFFSET STAR_PROGRAM
    JZ EP19
    CMP BYTE PTR ES:[SI],0AH
    JNZ EP12
    ADD SI,6
    JMP EP18
  EP19:
    ADD SI,5
  EP18:
    MOV DI,OFFSET ERROR_PROGRAM1
    PUSH SI
    MOV CX,ERROR_PC3
    MOV SI,OFFSET ERROR_P3
    MOV ERROR_COUNT1,CX
    REP MOVSB
    POP SI
    INC ERROR_COUNT1
    MOVSB
  EP13:
    MOVSB
    INC ERROR_COUNT1
    CMP BYTE PTR DS:[SI],22H
    JNZ EP13
    MOVSB
    INC ERROR_COUNT1
    MOV CX,ERROR_PC1
    ADD ERROR_COUNT1,CX
    MOV SI,OFFSET ERROR_P1
    REP MOVSB
    PUSH DX
    XOR DX,DX
    CALL ADD_FIFO
    ADD ERROR_COUNT1,DX
    POP DX
    MOV CX,ERROR_PC2
    ADD ERROR_COUNT1,CX
    MOV SI,OFFSET ERROR_P2
    REP MOVSB
    POP DI
    POP SI
    RET
ERROR_PATH1 ENDP

ONE_LINE_STAR PROC NEAR
  OLS4:
    CMP [SI],AL
    JZ OLS2
    JAE OLS15
  OLS7:
    CMP WORD PTR [SI],0A0DH
    JZ OLS16
    INC SI
    JMP OLS7
  OLS16:
    INC SI
  INC SI
  CMP WORD PTR [SI],"$$"
  JNZ OLS4
  JMP OLS14
OLS15:
  MOV WORD PTR [BX],0FFFFH
  INC BX
  INC BX
  CMP WORD PTR [SI],"$$"
  JNZ OLS98
OLS14:
  STC
  RET
OLS98:
  CLC
  RET
OLS2:
  INC SI
  CMP BYTE PTR [SI]," "
  JZ OLS2
  CMP [SI],AH
  JNZ OLS3
OLS5:
  INC SI
  CMP BYTE PTR [SI]," "
  JZ OLS5
  MOV [BX],DI
  INC BX
  INC BX
OLS6:
  INC DX
  MOVSB
  CMP WORD PTR [SI],0A0DH
  JNZ OLS6
  INC DX
  INC DX
  MOVSW
OLS12:
  CMP [SI],AL
  JNZ OLS9
OLS11:
  INC SI
  CMP WORD PTR [SI],0A0DH
  JNZ OLS11
  INC SI
  INC SI
  JMP OLS12
OLS9:
  CMP WORD PTR [SI],"$$"
  JNZ OLS10
  STC
  RET
OLS10:
  CLC
  RET
  OLS3:
    INC SI
    CMP WORD PTR [SI],0A0DH
    JNZ OLS3
    INC SI
    INC SI
    JMP OLS4
ONE_LINE_STAR ENDP

READ_STAR_BASE PROC NEAR
    CALL FILE_PREPARE2
    MOV DX,OFFSET STAR_BASE_DAT
    CALL OPEN_FILE_READ
    MOV FILE_HANDLE,AX
    MOV CX,4000
    MOV BX,FILE_HANDLE
    MOV DX,OFFSET SBU
    CALL READ_FROM_FILE
    MOV BX,FILE_HANDLE
    CALL CLOSE_FILE
    RET
READ_STAR_BASE ENDP

INTEGER_DECLARE PROC NEAR
    MOV SI,OFFSET C1+1
    MOV DL,[SI-1]
    XOR DH,DH
    MOV DI,OFFSET DECLARE_INT
    MOV CX,DX
    REP MOVSB
    MOV SI,OFFSET STAR_PROGRAM
  ID2:
    CMP WORD PTR [SI],"ts"
    JNZ ID1
    CMP WORD PTR [SI+2],"ra"
    JNZ ID1

    ID3:
       INC SI
       CMP BYTE PTR [SI],0DH
       JZ ID1
       CMP BYTE PTR [SI],"&"
       JNZ ID3
       MOV WORD PTR ES:[DI],"ni"
       MOV WORD PTR ES:[DI+2]," t"
       ADD DI,4
       ADD DX,4
    ID4:
       INC SI
       CMP BYTE PTR [SI],","
       JZ ID5
       MOV AL,[SI]
       MOV ES:[DI],AL
       INC DI
       INC DX
       JMP ID4
    ID5:
       CALL REPLACE_STRING
       MOV BYTE PTR ES:[DI],";"
       MOV WORD PTR ES:[DI+1],0A0DH
       ADD DI,3
       ADD DX,3
    ID6:
       INC SI
       CMP BYTE PTR [SI],0DH
       JNZ ID6

  ID1:
     INC SI
     CMP BYTE PTR [SI],0
     JZ ID10
     JMP ID2
  ID10:
     MOV ES:INT_COUNT,DX
     RET
INTEGER_DECLARE ENDP

REPLACE_STRING PROC NEAR
    PUSH SI
    MOV SI,OFFSET D1
    XOR CH,CH
    MOV CL,[SI]
    INC SI
  SP1:
    PUSH SI
    PUSH DI
    PUSH CX
    XOR CH,CH
    MOV CL,[SI]
    MOV SI,[SI+1]
    SP3:
       DEC DI
       MOV AL,[SI]
       CMP AL,ES:[DI]
       JNZ SP2
       INC SI
    LOOP SP3
    POP CX
    POP DI
    POP SI
    JMP SP4
  SP2:
    POP CX
    POP DI
    POP SI
    ADD SI,3
  LOOP SP1
    POP SI
    RET
  SP4:
    MOV CL,[SI]
    XOR CH,CH
    ADD CX,7
    SUB DI,CX
    SUB DX,CX
    POP SI
    RET
REPLACE_STRING ENDP

INTEGER_DECLARE1 PROC NEAR
    XOR DX,DX
    MOV SI,OFFSET STAR_PROGRAM
    MOV DI,OFFSET DECLARE_INT1
  ID22:
    CMP WORD PTR [SI],"ts"
    JNZ ID21
    CMP WORD PTR [SI+2],"ra"
    JNZ ID21
    XOR AH,AH

    ID23:
       INC SI
       CMP BYTE PTR [SI],0DH
       JZ ID21
       CMP WORD PTR [SI],2C22H
       JNZ ID23
       CMP AH,1
       JZ ID23
       MOV AH,1
       MOV WORD PTR ES:[DI],"ni"
       MOV WORD PTR ES:[DI+2]," t"
       ADD DI,4
       ADD DX,4
       INC SI
    ID24:
       INC SI
       CMP BYTE PTR [SI],","
       JZ ID25
       MOV AL,[SI]
       MOV ES:[DI],AL
       INC DI
       INC DX
       JMP ID24
    ID25:
       MOV WORD PTR ES:[DI],")("
       MOV BYTE PTR ES:[DI+2],";"
       MOV WORD PTR ES:[DI+3],0A0DH
       ADD DI,5
       ADD DX,5
    ID26:
       INC SI
       CMP BYTE PTR [SI],0DH
       JNZ ID26

  ID21:
     INC SI
     CMP BYTE PTR [SI],0
     JZ ID30
     JMP ID22
  ID30:
     MOV SI,OFFSET C2+2
     MOV CX,[SI-2]
     ADD DX,CX
     REP MOVSB
     MOV ES:INT_COUNT1,DX
     RET
INTEGER_DECLARE1 ENDP

CONNECT_GENERATOR PROC NEAR
    XOR DX,DX
    XOR AH,AH
    MOV SI,OFFSET STAR_PROGRAM
    MOV DI,OFFSET CONNECT_PROGRAM
  CG1:
    CMP WORD PTR [SI],"ts"
    JNZ CG2
    CMP WORD PTR [SI+2],"ra"
    JNZ CG2

    CG3:
       INC SI
       CMP BYTE PTR [SI],0DH
       JZ CG2
       CMP BYTE PTR [SI],22H
       JNZ CG3
       CMP AH,0
       JZ CG9
       MOV WORD PTR ES:[DI],",0"
       MOV BYTE PTR ES:[DI+2],22H
       ADD DI,3
       ADD DX,3
       PUSH SI
     CG8:
       INC SI
       CMP BYTE PTR [SI],","
       JZ CG7
       MOV AL,[SI]
       MOV ES:[DI],AL
       INC DI
       INC DX
       JMP CG8
    CG7:
       CALL ADD_SECOND_ENTRY
       POP SI
    CG9:
       CALL ADD_FIRST_ENTRY
     CG4:
       INC SI
       CMP BYTE PTR [SI],","
       JZ CG5
     MOV AL,[SI]
     MOV ES:[DI],AL
     INC DI
     INC DX
     JMP CG4
   CG5:
     MOV BYTE PTR ES:[DI],","
     INC DI
     INC DX
   CG6:
     INC SI
     CMP BYTE PTR [SI],0DH
     JNZ CG6
CG2:
  INC SI
  CMP BYTE PTR [SI],0
  JZ CG10
  CMP WORD PTR ES:[DI-4],"ya"
  JNZ CG191
  CMP WORD PTR ES:[DI-6],"lp"
  JNZ CG191
  CMP WORD PTR ES:[DI-8],"si"
  JNZ CG191
  CMP BYTE PTR ES:[DI-9],"D"
  JZ CG10
CG191:
  CMP WORD PTR ES:[DI-4],"kn"
  JNZ CG192
  CMP WORD PTR ES:[DI-6],"iS"
  JZ CG10
CG192:
  MOV CX,OFFSET CG1
  JMP CX
CG10:
  DEC DI
  DEC DX
  CMP BYTE PTR ES:[DI],0AH
  JNZ CG10
  INC DI
  INC DX

  CMP CHL_CON,2
  JZ CG9098
  CMP CHL_CON,4
  JNZ CG901
CG9098:
  MOV CX,ADDER_LENGTH
  ADD DX,ADDER_LENGTH
  MOV SI,OFFSET ADDER_LINE
  REP MOVSB
  CALL ADD_FIFO
  MOV CX,ADDER_LENGTH1
  ADD DX,ADDER_LENGTH1
  MOV SI,OFFSET ADDER_LINE1
  REP MOVSB
```

```
CG901:

  CMP ERROR_COUNT1,0
  JZ CG98
  ADD DX,ERROR_COUNT1
  MOV CX,ERROR_COUNT1
  MOV SI,OFFSET ERROR_PROGRAM1
  REP MOVSB
CG98:
  MOV ES:CONNECT_COUNT,DX
  RET


ADD_FIRST_ENTRY:
     MOV AH,1
     MOV WORD PTR ES:[DI],"oc"
     MOV WORD PTR ES:[DI+2],"nn"
     MOV WORD PTR ES:[DI+4],"ce"
     MOV WORD PTR ES:[DI+6],"(t"
     MOV BYTE PTR ES:[DI+8],22H
     ADD DI,9
     ADD DX,9
     RET


ADD_SECOND_ENTRY:
     MOV WORD PTR ES:[DI],"0,"
     MOV BYTE PTR ES:[DI+2],","
     ADD DI,3
     ADD DX,3

     CALL ADD_FIFO

     MOV WORD PTR ES:[DI],"F*"
     MOV WORD PTR ES:[DI+2],"FI"
     MOV BYTE PTR ES:[DI+4],"O"
     MOV WORD PTR ES:[DI+5],";)"
     MOV WORD PTR ES:[DI+7],0A0DH
     ADD DI,9
     ADD DX,9
     RET


ADD_FIFO:
  MOV SI,FIFO_POINTER
  XOR AH,AH
  MOV AL,[SI]
  INC FIFO_POINTER
  CMP AL,10
  JC FIFO1
  MOV BL,10
  DIV BL
  CALL ADD_ONE_DIGIT
  MOV AL,AH
FIFO1:
    CALL ADD_ONE_DIGIT
    RET


  ADD_ONE_DIGIT:
    ADD AL,30H
    MOV ES:[DI],AL
    INC DI
    INC DX
    RET
CONNECT_GENERATOR ENDP

CODE_CONVERSION_ALL PROC NEAR
    MOV SI,OFFSET SBU
    MOV DL,10
  PAS5:
    CALL CODE_CONVERSION
    CALL CODE_CONVERSION
  PAS3:
    CMP WORD PTR [SI],0A0DH
    JZ PAS2
    INC SI
    JMP PAS3
  PAS2:
    CMP WORD PTR [SI+2],"$$"
    JNZ PAS4
    RET
  PAS4:
    INC SI
    INC SI
    JMP PAS5
CODE_CONVERSION_ALL ENDP

CODE_CONVERSION PROC NEAR
    XOR AH,AH
    MOV AL,[SI]
    SUB AL,30H
    CMP BYTE PTR [SI+1]," "
    JZ PAS1
    MUL DL
    SUB BYTE PTR [SI+1],30H
    ADD AL,[SI+1]
    MOV BYTE PTR [SI+1]," "
    MOV [SI],AL
    INC SI
    INC SI
    INC SI
    RET
  PAS1:
    MOV [SI],AL
    INC SI
    INC SI
    RET
CODE_CONVERSION ENDP
```

```
LINK_PARA_FILE PROC NEAR
    CALL CREATE_STOP
    CALL CREATE_SOU
    CALL CREATE_CF
    CALL CREATE_RF
    CALL CREATE_CHL
    CALL CREATE_COD
    CALL CREATE_MOD
    RET
LINK_PARA_FILE ENDP

CREATE_COD PROC NEAR
    MOV DI,OFFSET SBU
    CMP ECD_CON,1
    JZ CCOD4
    CMP ECD_CON,2
    JZ CCOD1
    CMP ECD_CON,3
    JZ CCOD1
    CMP ECD_CON,5
    JZ CCOD2
    RET
  CCOD4:
    MOV WORD PTR ES:[DI],"1+"
    MOV WORD PTR ES:[DI+2],"0."
    MOV WORD PTR ES:[DI+4],"+E"
    MOV BYTE PTR ES:[DI+6],"0"
    MOV WORD PTR ES:[DI+7],0A0DH
    MOV AX,9
    JMP CCOD3
  CCOD2:
    MOV WORD PTR ES:[DI],"0+"
    MOV WORD PTR ES:[DI+2],"6."
    MOV WORD PTR ES:[DI+4],"+E"
    MOV BYTE PTR ES:[DI+6],"0"
    MOV WORD PTR ES:[DI+7],0A0DH
    MOV AX,9
    JMP CCOD3
  CCOD1:
    MOV WORD PTR ES:[DI],"0+"
    MOV WORD PTR ES:[DI+2],"5."
    MOV WORD PTR ES:[DI+4],"+E"
    MOV BYTE PTR ES:[DI+6],"0"
    MOV WORD PTR ES:[DI+7],0A0DH
    MOV AX,9
  CCOD3:
    PUSH AX
    MOV DX,OFFSET COD_TDT
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX
    POP AX
    CALL FILE_PREPARE3
    RET
CREATE_COD ENDP
```

```
CREATE_MOD PROC NEAR
    MOV SI,OFFSET M_ARY
    MOV CL,[SI]
    XOR CH,CH
    MOV AL,MOD_CON
    CMP AL,9
    JNZ CMOD3
    CMP CHL_CON,3
    JNZ CMOD3
    MOV AL,20
  CMOD3:
    INC SI
  CMOD1:
    CMP AL,[SI]
    JZ CMOD2
    INC SI
    INC SI
  LOOP CMOD1
    RET
  CMOD2:
    XOR AX,AX
    MOV DI,OFFSET SBU
    MOV BL,[SI+1]
    CALL TRANSFER_DATA1
    XOR BL,BL
    CMP MOD_CON,10
    JNZ CMOD32
    MOV BL,1
  CMOD32:
    CALL TRANSFER_DATA1

    PUSH AX
    MOV DX,OFFSET MOD_TDT
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX
    POP AX
    CALL FILE_PREPARE3
    RET
CREATE_MOD ENDP

CREATE_STOP PROC NEAR
    XOR AX,AX
    MOV SI,OFFSET STOP_TDT1
    XOR BL,BL
    MOV DI,OFFSET SBU
    CALL TRANSFER_DATA
    PUSH AX
    MOV DX,OFFSET STOP_TDT
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX
    POP AX
    CALL FILE_PREPARE3
    RET
CREATE_STOP ENDP
```

```
CREATE_SOU PROC NEAR
    MOV DX,OFFSET SOU_CON_TDT
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX

    XOR AX,AX
    MOV DI,OFFSET SBU
    MOV BL,SOU_CON
    DEC BL
    CALL TRANSFER_DATA1
    CALL FILE_PREPARE3

    XOR AX,AX
    MOV SI,OFFSET SOU_TDT1
    MOV BL,SOU_CON
    MOV DI,OFFSET SBU
    CALL TRANSFER_DATA
    JAE CSU1
    RET
  CSU1:
    PUSH AX

    MOV DX,OFFSET SOU_TDT
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX

    POP AX
    CALL FILE_PREPARE3
    RET
CREATE_SOU ENDP

FILTER_TYPE DB 0

CREATE_CF PROC NEAR
    XOR AX,AX
    MOV DI,OFFSET SBU
    CMP CF_CON,0
    JZ CCF2
    MOV BL,CF_CON
    SUB BL,3
    XOR BH,BH
    MOV SI,OFFSET CF_BW_T
    MOV BL,[SI+BX]
    MOV CS:FILTER_TYPE,BL
    CALL TRANSFER_DATA1
  CCF2:
    CMP FILTER_TYPE,2
    JZ CCF3
    MOV SI,OFFSET CF_TDT2
    MOV BL,CF_CON
    CALL TRANSFER_DATA
    JAE CCF1
    RET
  CCF1:
    MOV BL,CF_CON
    MOV SI,OFFSET CF_TDT1
    CALL TRANSFER_DATA
    MOV BL,CF_CON
    MOV SI,OFFSET CF_TDT3
    CALL TRANSFER_DATA
    PUSH AX

    MOV DX,OFFSET CF_TDTA
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX

    POP AX
    CALL FILE_PREPARE3
    RET

  CCF3:
    PUSH AX
    MOV DX,OFFSET CF_TDTA
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX
    POP AX
    CALL FILE_PREPARE3

    XOR AX,AX
    MOV DI,OFFSET SBU
    MOV BL,CF_CON
    MOV SI,OFFSET CF_TDT4
    CALL TRANSFER_DATA
    JAE CCF5
    RET
  CCF5:
    PUSH AX
    MOV DX,OFFSET CF_TDTB
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX
    POP AX
    CALL FILE_PREPARE3
    RET
CREATE_CF ENDP

CREATE_RF PROC NEAR
    XOR AX,AX
    MOV DI,OFFSET SBU
    CMP RF_CON,0
    JZ CRF2
    MOV BL,RF_CON
    SUB BL,3
    XOR BH,BH
    MOV SI,OFFSET CF_BW_T+4
    MOV AL,[SI+BX]
    MOV CS:FILTER_TYPE,AL
    ADD AL,30H
    MOV BYTE PTR ES:[DI],"+"
    MOV ES:[DI+1],AL
    MOV WORD PTR ES:[DI+2],0A0DH
```

```
        ADD DI,4
        MOV AX,4
      CRF2:
        CMP FILTER_TYPE,2
        JZ CRF3
        MOV SI,OFFSET RF_TDT2
        MOV BL,RF_CON
        CALL TRANSFER_DATA
        JAE CRF1
        RET
      CRF1:
        MOV BL,RF_CON
        MOV SI,OFFSET RF_TDT1
        CALL TRANSFER_DATA
        MOV BL,RF_CON
        MOV SI,OFFSET RF_TDT3
        CALL TRANSFER_DATA
        PUSH AX

        MOV DX,OFFSET RF_TDTA
        CALL CREATE_FILE
        MOV FILE_HANDLE,AX

        POP AX
        CALL FILE_PREPARE3
        RET

      CRF3:
        PUSH AX
        MOV DX,OFFSET RF_TDTA
        CALL CREATE_FILE
        MOV FILE_HANDLE,AX
        POP AX
        CALL FILE_PREPARE3

        XOR AX,AX
        MOV DI,OFFSET SBU
        MOV BL,RF_CON
        MOV SI,OFFSET RF_TDT4
        CALL TRANSFER_DATA
        JAE CRF5
        RET
      CRF5:
        PUSH AX
        MOV DX,OFFSET RF_TDTB
        CALL CREATE_FILE
        MOV FILE_HANDLE,AX
        POP AX
        CALL FILE_PREPARE3
        RET
    CREATE_RF ENDP

    CREATE_CHL PROC NEAR
        XOR AX,AX
        MOV DI,OFFSET SBU
        CMP CHL_CON,4
        JNZ CCHL2
        MOV AL,PM_CON
        ADD AL,30H
        MOV BYTE PTR ES:[DI],"+"
        MOV ES:[DI+1],AL
        MOV WORD PTR ES:[DI+2],0A0DH
        ADD DI,4
        MOV AX,4
      CCHL2:
        MOV SI,OFFSET CHL_TDT1
        MOV BL,CHL_CON
        CALL TRANSFER_DATA
        JAE CCHL1
        RET
      CCHL1:
        PUSH AX

        MOV DX,OFFSET CHL_TDT
        CALL CREATE_FILE
        MOV FILE_HANDLE,AX

        POP AX
        CALL FILE_PREPARE3
        RET
    CREATE_CHL ENDP

    TRANSFER_DATA PROC NEAR
        XOR CH,CH
        MOV CL,[SI]
        INC SI
      TD2:
        CMP BL,[SI]
        JZ TD1
        ADD SI,7
      LOOP TD2
        STC
        RET
      TD1:
        PUSH SI
        MOV CX,[SI+3]
        MOV BX,[SI+5]
        MOV SI,[SI+1]
      TD15:
        PUSH BX
        CMP BYTE PTR [SI],0DH
        JNZ TD3
        CALL NUMBER_END
        ADD SI,BX
        MOV BX,OFFSET TD16
        JMP BX
      TD3:
        CMP BYTE PTR [SI],"-"
        JNZ TD4
        MOV BYTE PTR ES:[DI],"-"
```

```
  JMP TD5
TD4:
  MOV BYTE PTR ES:[DI],"+"
TD5:
  INC SI
  INC DI
  DEC BX
  INC AX
  CMP BYTE PTR [SI],"E"
  JNZ TD6
  MOV BYTE PTR ES:[DI],"0"
  INC DI
  INC AX
TD9:
  MOVSB
  INC AX
  DEC BX
  JMP TD7
TD6:
  CMP BYTE PTR [SI],0DH
  JNZ TD19
  CALL NUMBER_END
  ADD SI,BX
  MOV BX,OFFSET TD16
  JMP BX
TD19:
  MOVSB
  INC AX
  DEC BX
TD8:
  CMP BYTE PTR [SI],"E"
  JZ TD9
  CMP BYTE PTR [SI],0DH
  JNZ TD20
  CALL NUMBER_END1
  ADD SI,BX
  MOV BX,OFFSET TD16
  JMP BX
TD20:
  MOVSB
  INC AX
  DEC BX
  JMP TD8
TD7:
  CMP BYTE PTR [SI],"-"
  JNZ TD10
  MOV BYTE PTR ES:[DI],"-"
  JMP TD11
TD10:
  MOV BYTE PTR ES:[DI],"+"
TD11:
  INC SI
  INC DI
  DEC BX
  INC AX
```

```
    CMP BYTE PTR [SI],0DH
    JNZ TD17
    CALL NUMBER_END
    ADD SI,BX
    JMP TD16
  TD17:
    MOVSB
    INC AX
    DEC BX
    CMP BYTE PTR [SI],0DH
    JNZ TD17
    CALL NUMBER_END1
    ADD SI,BX
  TD16:
    POP BX
    DEC CX
    CMP CX,0
    JZ TD22
    MOV DX,OFFSET TD15
    JMP DX
  TD22:
    POP SI
    CLC
    RET
TRANSFER_DATA ENDP

TRANSFER_DATA1 PROC NEAR
    ADD BL,30H
    MOV BYTE PTR ES:[DI],"+"
    MOV ES:[DI+1],BL
    MOV WORD PTR ES:[DI+2],0A0DH
    ADD DI,4
    ADD AX,4
    RET
TRANSFER_DATA1 ENDP

NUMBER_END PROC NEAR
    MOV BYTE PTR ES:[DI],"0"
    INC AX
    INC DI
  NUMBER_END1:
    MOVSB
    INC AX
    DEC BX
    MOV BYTE PTR ES:[DI],0AH
    INC AX
    INC DI
    RET
NUMBER_END ENDP

NET_PARA_FILE PROC NEAR
    CALL CREATE_MA
    CALL CREATE_STAR
    CALL CREATE_ULOOP
    CALL CREATE_BLOOP
    RET
NET_PARA_FILE ENDP

CREATE_MA PROC NEAR
    CMP NET_CON,2
    JZ CMA1
    RET
  CMA1:
    CMP MA_CON,1
    JZ CMA31
    CMP MA_CON,2
    JZ CMA32
    MOV DX,OFFSET CSMA_TDT
    JMP CMA33
  CMA32:
    MOV DX,OFFSET TREE_TDT
    JMP CMA33
  CMA31:
    MOV DX,OFFSET ALOHA_TDT
  CMA33:
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX

    XOR AX,AX
    XOR BL,BL
    MOV SI,OFFSET MA_TDT1
    MOV DI,OFFSET SBU
    CALL TRANSFER_DATA
    XOR BL,BL
    MOV SI,OFFSET MA_TDT2
    CALL TRANSFER_DATA
    XOR BL,BL
    MOV SI,OFFSET MA_TDT3
    CALL TRANSFER_DATA
    MOV BL,NET_OD_MA
    CALL TRANSFER_DATA1
    MOV BL,REAL_TIME
    CALL TRANSFER_DATA1

    CMP MA_CON,2
    JZ CMP76
    CMP MA_CON,1
    JZ CMP77
    MOV SI,OFFSET MA_TDT5
    JMP CMP78
  CMP77:
    MOV SI,OFFSET MA_TDT4
  CMP78:
    XOR BL,BL
    CALL TRANSFER_DATA
  CMP76:

    CALL FILE_PREPARE3
    RET
CREATE_MA ENDP
```

```
CREATE_STAR PROC NEAR
    CMP NET_CON,1
    JZ CSR1
    RET
  CSR1:
    CMP SAF_TP,1
    JZ CSR2
    RET
  CSR2:
    MOV DX,OFFSET STAR_TDT
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX

    CALL SAVE_SF
    XOR BL,BL
    MOV SI,OFFSET S_TDT1
    CALL TRANSFER_DATA
    XOR BL,BL
    MOV SI,OFFSET S_TDT3
    CALL TRANSFER_DATA
    CALL SAVE_SF2

    CALL FILE_PREPARE3
    RET
CREATE_STAR ENDP

CREATE_ULOOP PROC NEAR
    CMP NET_CON,1
    JZ CUL1
    RET
  CUL1:
    CMP SAF_TP,2
    JZ CUL2
    RET
  CUL2:
    MOV DX,OFFSET ULOOP_TDT
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX

    CALL SAVE_SF
    XOR BL,BL
    MOV SI,OFFSET U_TDT1
    CALL TRANSFER_DATA
    CALL SAVE_SF2

    CALL FILE_PREPARE3
    RET
CREATE_ULOOP ENDP

CREATE_BLOOP PROC NEAR
    CMP NET_CON,1
    JZ CBL1
    RET
  CBL1:
    CMP SAF_TP,3
    JZ CBL2
    RET
  CBL2:
    MOV DX,OFFSET BLOOP_TDT
    CALL CREATE_FILE
    MOV FILE_HANDLE,AX

    CALL SAVE_SF
    XOR BL,BL
    MOV SI,OFFSET B_TDT1
    CALL TRANSFER_DATA
    XOR BL,BL
    MOV SI,OFFSET B_TDT3
    CALL TRANSFER_DATA
    CALL SAVE_SF2

    CALL FILE_PREPARE3
    RET
CREATE_BLOOP ENDP

SAVE_SF PROC NEAR
    XOR AX,AX
    XOR BL,BL
    MOV SI,OFFSET AFS_TDT1
    MOV DI,OFFSET SBU
    CALL TRANSFER_DATA
    XOR BL,BL
    MOV SI,OFFSET S_TDT2
    CALL TRANSFER_DATA
    MOV SI,OFFSET AFS_TDT2
    XOR BL,BL
    CALL TRANSFER_DATA
    RET
SAVE_SF ENDP

SAVE_SF2 PROC NEAR
    MOV SI,OFFSET MA_TDT3
    XOR BL,BL
    CALL TRANSFER_DATA
    MOV BL,NET_OD_SAF
    CALL TRANSFER_DATA1
    MOV BL,REAL_TIME
    CALL TRANSFER_DATA1
    RET
SAVE_SF2 ENDP

FILE_PREPARE2 PROC NEAR
    PUSH DS
    MOV AX,CODE
    MOV DS,AX
    MOV SI,OFFSET ERROR_HANDLER2
    CALL SET_RETURN_ADDRESS
    CALL SET_CRITICAL_ADDRESS
    POP DS
```

```
        RET
    FILE_PREPARE2 ENDP

    FILE_PREPARE3 PROC NEAR
        MOV CX,AX
        MOV BX,FILE_HANDLE
        MOV DX,OFFSET SBU
        CALL WRITE_TO_FILE
        MOV BX,FILE_HANDLE
        CALL CLOSE_FILE
        RET
    FILE_PREPARE3 ENDP

    ERROR_HANDLER2 PROC NEAR
        MOV AX,CONST
        MOV DS,AX
        MOV ES,AX
        MOV SP,STACK_POINTER1
        MOV AX,OFFSET RS7
        JMP AX
        RET
    ERROR_HANDLER2 ENDP
CODE ENDS
END
```